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Japanese Competition

SO serious has the effect on certain British industries of Japanese competition become that the Government has taken steps to limit the importation of certain Japanese manufactures into the Crown Colonies. At the moment those most affected are our textile manufacturers, but the development of industry by Japan has recently been so rapid that the prospect of other producers in this country becoming concerned is by no means remote. Any diminution of trade at home must be felt by the railways, and they must be expected to take keen interest in factors which are likely to diminish the volume of the business they must carry to balance their budget. That is why we are glad to be able to publish this week the article by Sir Harry McGowan, Chairman of Imperial Chemical Industries Limited, setting forth the opinions he has formed as a result of his recent visit to the Far East. We are particularly pleased that he emphasises the futility of wasting time in idle complaint about Japanese prices being lower than ours, which so many have been doing lately. While we agree with Sir Harry McGowan that British industry must work out its own salvation, and can achieve a great deal along the lines he indicates, we feel that the ultimate solution of all international, and indeed all internal, trade competition must be sought in such an increase of purchasing power as to expand consumption until either production is outstripped—which is almost inconceivable in the present stage of scientific development—or consuming desire satisfied. As Sir Harry McGowan

indicates in his article, however, matters involving national economic policy are beyond the direct scope of industrialists as such, and must be tackled by the Government, but tackled they must be sooner or later.

* * * *

Railway Air Mails

For many years the railways of this country have been principal internal carriers of the Royal Mail, but with the march of progress taking to flying it seems inevitable that before long we shall see the mails soaring in its train. This fact was brought home to us during a visit to the International Air Post Exhibition now being held in London. But it is to the credit of the Great Western Railway that it had the enterprise to be the first to foresee the possibilities of such a service, and for having last summer provided, with the necessary consent of the Postmaster-General, the first regular internal air mail in this country. Although the newly-formed Railway Air Services Limited, the purpose of which is to continue this development, has not yet obtained the necessary sanction of the Postmaster-General to carry mails, there is little doubt that the privilege will be granted as soon as the services have firmly established themselves. It is, therefore highly probable that, with the completion and future extension of the schemes now being considered by Railway Air Services Limited for a network of internal air lines, the railways will in the future be provided with their own air services for mail carrying.

* * * *

The Week's Traffics

Last week's traffics of the four group companies compare with those of a week in 1933 which saw the start of summer tickets. Passenger train returns, as will be seen from the accompanying table, are up in every case except the Great Western, all companies continuing to show increases in merchandise earnings, which have now improved for the 18 weeks of the current year to the extent of £776,000 on the L.M.S.R., £686,000 on the L.N.E.R., £308,000 on the Great Western, and £49,500 on the Southern. Passenger train earnings to date are £30,000 up on the L.M.S.R., £28,000 up on the Southern, and £7,000 on the L.N.E.R., but on the Great Western they are £35,000 down. Coal class receipts for the 18 weeks have increased £461,000 on the L.N.E.R., £278,000 on the L.M.S.R., £63,000 on the Great Western, and £52,500 on the Southern.

	18th Week				Inc. or dec.	
	Pass. &c.	Goods, &c.	Coal, &c.	Total.	Year to date	%
L.M.S.R. ..	+ 11,000	+ 32,000	- 2,000	+ 41,000	+ 1,084,000	+ 5.83
L.N.E.R. ..	+ 4,000	+ 34,000	+ 27,000	+ 65,000	+ 1,154,000	+ 8.54
G.W.R.	- 4,000	+ 8,000	-	+ 4,000	+ 336,000	+ 4.34
S.R.	+ 1,000	+ 8,000	+ 8,000	+ 17,000	+ 130,000	+ 2.16

Mersey Railway traffics to date show an increase of £3,204, and the aggregate earnings of London Transport for 44 weeks amount to £22,118,100.

* * * *

Transport in Argentina

In an editorial note on April 20 last reference was made to the fact that the President of the Argentine Republic was considering the question of appointing a committee to carry out a thorough investigation concerning the situation of the railway companies, and making representations to the Government in regard to the remedial measures that should be adopted. This committee, or honorary board, has now been appointed, as will be seen from an article by a correspondent in our News Section. Its appointment followed on a memorandum presented by the railway companies to the Government at the end of March pointing out the extreme seriousness of their financial situation and suggesting measures for its improve-

ment. The Chairman of the new Board is the Minister of Public Works, and its members include the General Manager of the State Railways, the Chairman of the Local Board of the Buenos Ayres & Pacific Railway, and one representative each of the Argentine Industrial Union, of the Stock Exchange, and of the Argentine Rural Society. Its terms of reference are to study the conditions under which the transport industry is operating and the economic situation of the railways, and to suggest administrative and legal measures which it deems to be most in agreement with the general interests of the country.

* * * *

The Economics of Cheaper Fares

In a recent issue of our American contemporary, the *Railway Age*, attention is drawn to the all-important question of how the most profitable standard passenger fare rate, that is the rate which provides the greatest net returns, should be determined. It is pointed out that when a rate—such as 3·6 cents a mile in U.S.A., or 1½d. a mile in this country—has firmly established itself over a long period, there is a tendency for it to be regarded with a veneration which blinds those concerned to changes in economic conditions bearing upon it. At present it may be argued that hesitation to experiment with passenger fare rates is justified; for, with an economic situation which inclines to keeping the purchasing power of an apprehensive public throughout the world at a low level, it is impossible to apply with any great degree of confidence straightforward economic principles of supply and demand. Moreover, there are so many factors of quantities and values inexpressible in any definable units which must be considered, that to try to set out a formula by which the result of a fare amendment might be estimated is well nigh impossible. Such, therefore, is the position which confronts the administration considering the problem of whether or not it should lower its passenger fare rates. How far it must be decided, for example, should economic theory be modified by the psychological effects of an offer of cheaper fares on a community at present starved of adequate purchasing power, and uncertain of its economic future?

* * * *

Malaria and Railways

In the course of the report upon a meeting of the Ross Institute Industrial Advisory Committee—which is incorporated in the London School of Hygiene and Tropical Medicine—held on March 27 last, mention is made of the conditions prevailing at the site of the Zambesi Bridge construction works. These were described on page 211 in THE RAILWAY GAZETTE of February 17, 1933, but the report adds to that description the information that the European hospital “has only been used as a guest house so far,” as there have been no serious cases of illness among the European staff, thanks to the anti-malarial measures taken by the Cleveland Bridge & Engineering Co. Ltd., upon the advice of Mr. Harrison, who was specially sent out from the Ross Institute. Dealing with those malarial incubators, borrow pits, found alongside almost every railway in the plains of India, the report recommends the breaking up of the hard impervious bottoms during the cold weather to assist percolation, prior to the filling up of all such pits—a measure essential near dwellings and advisable elsewhere wherever possible on grounds of eventual economy—cut jungle or line refuse being used if necessary for this purpose when earth is not available or too costly. Borrow pits in clay soils are not normally dangerous mosquito breeding grounds, the report adds, and it is only those on land where there is little colloidal clay that periodically become so.

Great Western of Brazil Railway

For the year 1933 there was a decrease in gross receipts of 7·51 per cent, attributable to the early finish of the 1932-33 sugar crop and intensified road competition. In working expenses there was an advance of 1·53 per cent, caused entirely by an increased programme of rolling stock repairs and by higher fuel costs. Expenses in all other departments were reduced. The amount of sterling allotted to the company by the exchange control in Brazil at the official average rate of exchange of 4·59d. was insufficient to meet sterling requirements, and additional remittances had to be effected through the semi-official exchange market at a milreis premium, involving the company in a loss of £15,500. Allowing for prior charges the deficit for the year was £126,112. The accompanying table shows some operating figures:—

	1933	1932
Kilometres open	1,742	1,713
Passengers	2,347,289	2,241,718
Tons of goods	1,134,466	1,257,425
Goods ton-km.	79,524,080	82,946,775
Passenger receipts	117,522	119,027
Goods receipts	378,212	418,730
Gross receipts	533,493	576,820
Working expenses	489,416	482,041
Net receipts	44,077	94,779

More rapid transport to fight road competition involved an increase of nearly 6 per cent. in goods train kilometrage, but it also improved the average freight train load by 1·14 per cent.

* * * *

The First American State Railway

Although the U.S.A. with its 259,740 miles of railway is one of the few large countries in which all the lines are under private ownership, we are reminded by the recent centenary celebrations of the Philadelphia & Columbia Railroad that this was not always so. Powers for such a line were granted to Col. John Stevens (1749-1838), of Hoboken, in 1823. He was one of America's first advocates of railways, and as early as 1811 had applied unsuccessfully to the New Jersey legislature for a railroad charter, and also tried to persuade the Erie Canal Commissioners to build a railway instead of a canal across New York State from Albany to Buffalo. Then in 1815 he secured a charter for a line to join the Delaware and Raritan rivers, connecting at each end with steamboat lines for Philadelphia and New York. He failed to raise the necessary capital, both for this and for his Philadelphia and Columbia line, and the State of Pennsylvania subsequently repealed the latter charter and itself assumed the responsibility for building the line, which was the first railway work undertaken by a State government. Construction began in 1829 and about 20 miles at the eastern end were opened in 1832. The entire line, 81 miles of double track, was completed by April 17, 1834, which is the event just commemorated. It formed part of the Main Line of Public Works, a chain of canals and railway connecting the Delaware and Ohio rivers.

* * * *

State Railways in the U.S.A.

At the celebrations referred to in the preceding note, Mr. A. J. County, Vice-President in charge of Finance and Corporate Work, Pennsylvania Railroad, took the opportunity to refer to government ownership and operation, in view of certain agitation in the U.S.A. to that end. Only the other day, he said, Dr. Virgil Jordan, a celebrated economist, and a strong opponent of government ownership, in a public address, predicted its advent

by 1940, unless, meanwhile, the large majority of the people who did not want it, effectively arrayed themselves against the efforts of the organised minority. Mr. County added that when he entered the service of the Pennsylvania Railroad in 1890, one of the first things he remembered was a discussion of an important payment by the company to the State of Pennsylvania, namely, the final instalment of the \$15,500,000 of principal and interest due to the State on account of the Main Line of Public Works, purchased by the Pennsylvania Railroad Company in 1857, the most important part of which was the Philadelphia & Columbia Railroad. This was one of the most ambitious government ownership projects ever undertaken in the United States, the State alone having sufficient capital resources to construct it. It began full of promise and for a time succeeded. The ultimate results were exceedingly unfavourable and injurious to the commonwealth and its people, by reason of mismanagement and political corruption. Mr. County was of opinion that government operation of railways, at any rate in the U.S.A., was even now inseparable from the frailties of human nature and partisan politics, and his experienced views are worthy of close consideration by those who would lightly cast aside the efficiency which has resulted from a century of private operation.

* * * *

Bridge Reconstruction at Belper

It is a tribute to the ramifications of the old Midland Railway system that the closing on Sundays (referred to on page 857) of the main line between Derby and Ambergate, in order to facilitate the reconstruction of the bridges which carry it across the River Derwent between Belper and Ambergate, has so little effect on through train times. The time tables operative from April 30 to July 8 show that the overall times of through Sunday expresses between St. Pancras and Manchester Central remain unaltered; some of them are diverted via Trent, Codnor Park, and Butterley, rejoining the Manchester main line by means of the north curve at Ambergate, and others use the Sheffield main line as far as Dore South Junction, crossing thence through Edale to Chinley, an increase of $1\frac{1}{2}$ miles in distance in the former case and 5 miles in the latter. Special stops are made at Trent in both directions in order to give communication to and from Derby. Through trains between the west and north of England take the north curve at Derby to reach Trent, and travel thence up the Erewash valley to Chesterfield; again the diversion can be made without any reversal of the train. Local services from Derby to the Manchester direction travel similarly as far as Codnor Park, and then across through Butterley to Ambergate. Communication is maintained locally between Derby, Duffield, Belper, and Ambergate by motor-buses, arranged to connect as conveniently as possible with the various trains at Derby and Ambergate.

* * * *

Four-wheeled v. Six-wheeled Bogies

The introduction by the London Midland & Scottish Railway of some new first-class open corridor cars is of interest in that these are the first experiment, by the L.M.S. or any of its constituent companies, in building stock of so great a length as 65 ft. on four-wheeled bogies. The fallacy that twelve wheels are necessary for smooth riding has, of course, long since been exploded. In the last decade the London & North Eastern Railway has invariably mounted 65 ft. 6 in. dining and sleeping cars on eight wheels, while before the war the Great Western Railway built 70 ft. 8-wheeled stock as its general standard

of coach construction, though the latter seems to have abandoned the construction of 70 ft. cars for a uniform length of 60 ft. In the new L.M.S.R. coaches the tare, as compared with the previous vestibule cars, rises from 30 to 35 tons, though a body and underframe of somewhat sturdier construction absorbs a part of this increase; space is thus afforded for an extra bay of seating, there being now 42 seats in place of 36. A 12-wheeled car of corresponding construction and accommodation would weigh at least 40 tons. In accordance with customary L.M.S. practice, large entrance lobbies, with lavatories and luggage racks, are provided at both ends of each car.

* * * *

The Locomotive Age Limit in America

A statement recently appeared in the *Railway Age* which showed that more than half of the steam locomotives now in service on U.S.A. Class I railways are over twenty years old. The total number is 51,425, averaging 20.7 years of age. The oldest unit recorded was built in 1865 and the owning company scheduled it for repairs in 1938, when it would be 73 years of age. More than 53 per cent. of all the engines, or 27,598, are 21 years of age or more, and of this number 6,696, or about one quarter, are scheduled for retirement at the end of 1938. On the basis of wheel arrangement, there are 46 types of engines, of which 40 are engaged in main and branch line traffic and 6 in shunting yards. The estimated mileage which can be secured from locomotives when new, or between shoppings for general repairs, averages 86,380 per locomotive, the highest averages being found in the western district with 105,423, and the lowest in the eastern district with 68,158. From the same report it appears that the life expectancy of the 2-10-0 type is 28 years and the 4-4-0 type 54 years, and it is worthy of note that the southern railways calculate on a much longer life for their locomotives than do those in the eastern and western districts. Probably the railways do not expect to secure any such length of service as the calculations show, but the exaggerations are due largely to the fact that depreciation charges in these cases are inadequate.

* * * *

The Outlook from the Cab

We have on previous occasions remarked upon the desirability of a clear outlook from the locomotive cab, as well as upon the varying characteristics of different types of engines in this respect. With the large and high-pitched boilers now common, the space available for the front windows is necessarily restricted, but there are various measures which can improve the outlook, some of them designed specifically for the purpose, and others, not so designed, which do nevertheless effect some improvement. To the advantages of the tapered form of boiler may be added that it presents less obstruction to the line of sight because of its smaller diameter and lower pitch at the front end. A similar result is obtained in tank engines when the tanks are tapered towards the front, a better view being obtained, especially when the engine is traversing curves. We have noted on Continental locomotives that the hoods sometimes fitted above the front windows are useful for excluding glare from the sun, and the fitting of screenwipers, as used on motor cars, provides an aid in keeping the glass clean during wet and foggy weather. In this connection the Pottier clear-view arrangement fitted to a number of locomotives on French railways, as described in the issue of *THE RAILWAY GAZETTE* dated January 12 last, may be said to mark a distinct advance in this all important matter of clear outlook from locomotive cabs.

Transport in Buenos Aires

AS indicated in an Editorial Note in THE RAILWAY GAZETTE of April 20, a commission appointed by the Intendente (Mayor) of Buenos Aires in January, 1933, to study the problem of co-ordinating transport in that city and the adjacent suburban zones, recently produced a majority and a minority report. These reports agree in recommending the formation of a body somewhat in the nature of the London Passenger Transport Board, differing only, apart from minor details, in their views as to whether it should be a national or a municipal entity. The majority report, together with a draft law based on its recommendations, has been submitted to the Intendente, who has passed on the report to the President of the Republic, by whom it has in turn been sent to Congress, with an indication that the importance of the subject merits very early consideration. The report had thus assumed the form of a Draft Bill.

In Buenos Aires the layout of the streets is very liable to cause congestion. The so-called centre of the city is not really the centre at all, but at a point on the outer edge bounded by the River Plate, and traffic has to run through the main radial channels from the centre outwards to the boundary. Involved in competition are five companies concerned with subways and tramways, namely: Anglo-Argentine Tramways, Lacroze Tramways, Southern Electric Tramways, Buenos Aires Town and Docks Tramways, and Buenos Aires Central Terminal Railway. Of these companies three operate under national concessions and two under municipal. There are also more than sixty omnibus companies and innumerable operators of small omnibuses and "colectivos" or collective taxis. The disorderly competition which has arisen between the different systems of transport has been aggravated by the wholesale granting of omnibus concessions and by the fact that the "colectivos" are entirely unregulated as to routes, stopping-places, types of vehicle, &c. There can be no doubt that the different scales of taxation and the rigid regulation of the tramway and subway companies severely handicap them in their competition with the uncontrolled omnibuses and "colectivos," and the municipality may be forced to the conclusion that by its unlimited grants of concessions to omnibuses and "colectivos" it is endangering not only its collection of taxes and charges from the established and essential tramway and subway undertakings, but their very existence. The majority report is quite clear that the small carrying capacity of the "colectivos" and small omnibuses adds to the congestion of traffic, and that these and omnibuses could not take the place of tramways and subways. In the opinion of the committee the present competitive situation produces: (a) prejudicial reductions in receipts by means of uneconomic tariff manipulations, which only benefit certain traffic and certain zones, to the prejudice of the public in general; (b) unnecessary increase in operating expenses; and (c) a tendency to serve with competitive lines the zones of remunerative traffic and abandonment of the less productive zones which are thus unnecessarily prejudiced.

The proposal by the majority committee is for the formation of an entity to be named "Transport Corporation of Buenos Aires and Surroundings," being a limited liability company operating under a national concession. The scope of its activities will be the collective transport of passengers within the federal capital, and the interchange of such transport with the Province of Buenos Aires, which up to the present is being effected by means of railways, subway tramway, surface tramway, omnibuses, small omnibuses and "colectivos," with express exception of the transport now effected by rail-

ways of national jurisdiction, whose lines of access form a portion of a network of railways running out of the city. The Corporation is, however, to be authorised to combine its services—passenger or goods—with the lines of national jurisdiction, as also to establish tariffs in such cases, under authorisation of the competent authority. Tariffs for its own services are to be just and reasonable, and will be regulated by the national railway laws, so far as applicable. Construction of extensions as required by the competent authorities will be binding on the new Corporation. The scheme also provides for the valuation of undertakings to be taken over and for the new capital structure. Control of the services provided by the Corporation will be vested in a special body, on which the municipality of Buenos Aires will be directly represented.

* * * *

Southern Railway Valuation

THE determination by the Railway Assessment Authority of the first valuation roll of the Southern Railway at £2,180,000, as compared with the figure of £2,250,000 shown in the draft roll published last year, means that the authority has not accepted the contention of the Southern Railway that the latter figure was unreasonable and should be reduced to a sum not exceeding £500,000. The new figure of £2,180,000, which was published in our issue of May 4 at p. 802, actually represents an increase of £328,000 over the present net annual value and will doubtless have a considerable weight in influencing the management to exercise its right of appealing to the Railway & Canal Commission within two months. Subsequently to this, appeals may be made on questions of law only to the House of Lords and, after all appeals have been heard and determined, the values appearing in the roll as finally revised will be transferred to the local valuation lists in substitution for the existing rating values. These will then take effect from April, 1931, and any necessary adjustments in past payments will have to be made between the company and the rating authorities. The Railway Assessment Authority has not yet published the rolls relating to the remaining three amalgamated railway companies, the present rateable value of whose undertakings is in the neighbourhood of £8,500,000, but when the rolls are finally revised, any alterations will also date back to April, 1931, in each case.

The importance of these decisions to traders lies in the fact that any alteration in the rateable value of railway hereditaments will have a direct bearing on the amounts to be paid into the rebates fund in connection with the Railway Freight Rebates Scheme which was established under the Local Government Act, 1929. It will be recalled that under this Act the railway companies were relieved from the payment of three-fourths of the local rates on railway hereditaments upon condition that similar amounts are contributed to the Railway Freight Rebates Fund from which source they are utilised to assist trade and industry by means of rebates from the railway rates normally payable on certain traffics enumerated in the Eleventh Schedule to the Act. The position of this fund is reviewed annually by the Railway Rates Tribunal and on the last three occasions it has been intimated on behalf of the railway companies that, in their view, when the revised valuation is completed, their total annual relief will not exceed the sum equal to one-half of the rate relief at present estimated for the purpose of calculating the rebates, and, indeed, it might probably be less.

If this assumption should prove to be accurate, it would involve a substantial reduction in the rebates now being paid to traders through the instrumentality of the fund. Any sudden and substantial variation in the quantum of these rebates, however, would be extremely undesirable

for traders quoting prices in connection with forward contracts, and, therefore, the railway companies and traders have agreed, with approval of the Railway Rates Tribunal, that the substantial surplus which had been accumulated in the fund should be retained for the time being in order to meet any difficult situation which might eventuate when the valuations are complete. On September 30, 1933, this surplus amounted to £1,230,465, and the publication by the Authority of the remaining valuation rolls will, therefore, be awaited with great interest seeing that, if the anticipations of the railway companies prove to be inaccurate, the question of the disposal of this surplus will require consideration.

San Paulo (Brazilian) Railway

THE main line runs inland from the port of Santos for 86½ miles on the 5 ft. 3 in. gauge through San Paulo to Jundiahy. It provides an outlet at Santos for a very large area, and is one of the largest coffee carriers in the world. There is also the Bragantina section of 67 miles on the metre gauge. During the year 1933, for which the report has now been issued, the quantity of coffee carried for export was 902,897 tons, being 242,795 tons more than in 1932, and the largest tonnage since 1924. There was also a satisfactory increase in the amount (1,496,538 tons) of general goods carried, and the total goods traffic amounted to 4,177,886 tons, an increase of 897,726 on the previous year. In comparing the results of the two years regard must be had to the fact that in 1932 the revolt in the State of San Paulo caused the closure of the port of Santos during the period from July 9 to October 3, and a consequent dislocation of business generally until towards the end of that year, whereas in 1933 there was no such disturbance. In traffic receipts in 1933 there was a net increase of £77,716, the Bragantina section having shown a small decrease, and the operating ratio in Brazil for the joint system improved from 74.55 per cent. in 1932 to 73.15 per cent. in 1933.

For 1933 the company proposes paying a dividend of 4 per cent. (free of tax) on the ordinary stock, whereas in 1932 only the preference dividend was paid, owing to the difficulty of remitting currency balances, and the amount carried forward in sterling was substantially increased. The exchange position has now been relieved to some extent by an arrangement made last July with the Government of Brazil for the deposit with the Banco do Brazil of arrears of remittances, to be repayable by equal monthly instalments in sterling over a period of six years, the milreis being computed at 3½ d. Monthly instalments of £10,108 under this arrangement have been punctually paid. On the conclusion of this arrangement, in order to provide funds immediately necessary in London the board sold last August £500,000 of 5 per cent. redeemable debenture stock, which is to be redeemed by an accumulative sinking fund of 1 per cent. commencing this year. The general financial position is shown in the accompanying table:—

	1933	1932
Gross receipts	1,577,893	1,500,154
Expenditure	1,256,598	1,223,086
Net receipts	321,295	277,068
Income from investments, &c. ..	27,793	37,975
Total net income	349,088	315,043
Debenture interest and other charges	292,139	237,495
Dividends	170,000	50,000
Transfer from reserve	—	100,000
Brought forward	208,300	80,752
Carried forward	95,249	208,300

Notwithstanding the relief afforded by the foregoing arrangement, remittances for current needs at the official

nominal rate of exchange have continued to be severely restricted. The company has accordingly set aside £75,000 as a reserve for loss on exchange, this amount being included in the 1933 figure of £292,139 for debenture interest and other charges. The Brazilian Minister of Transport has recently resolved to abolish the system, which has prevailed since 1922, of sliding scale tariffs varying with the rate of exchange and the Government has nominated a commission to study a new set of tariffs in conjunction with the company.

* * * *

Speeding up on the Continent

WHEN the summer time-tables of railways on the European Continent come into force on May 15, something in the nature of a revolution will be wrought in the services of several countries. Europe has now generally recognised that the time has come to exploit to the utmost the advantages peculiar to the railway. No other form of surface or air transport can show a similar combination of speed and reliability coupled with so high a degree of safety and such true economy of working. So-called "orthodox" economics have failed to bring into prominence the extremely satisfactory ratio between energy expended and service rendered which is among the principal recommendations of rail transport, with the result that railway traffic has lately shown a tendency to diminish, for which diminution there is no scientific justification. It is with the object of checking this decline, and of vindicating at the same time the merits of transport by rail by practical demonstration, that the enterprising administrations of the French, German, Italian, Dutch and Danish railways, in particular, have recently pursued a consistent policy directed towards the acceleration of their services. The greatest all-round progress has so far been made in France, but Belgium reached an unprecedented standard of speed in 1933, and is preparing for further developments in this direction next year, when electric trains will be in operation between Brussels and Antwerp and new steam locomotives at work on other services. Italy, too, is steadily progressing, though it will be a year or two before her railways reach the French standard of speed.

But it is in Germany, Holland and Denmark that May 15 will mark an almost revolutionary advance. We recorded in our issue of April 6 the principal features of the accelerations in Germany, but we may repeat here that they represent a general standard of about 60 m.p.h. for main line expresses. Bearing in mind the rather leisurely progress of German trains up to a few years ago, when the number of 50 m.p.h. schedules could be counted on the fingers of two hands, the drastic revisions involved in the attainment of the new standard will be better appreciated. Nor has the apex been reached, for it is promised that a year hence, with the more widespread use of streamlined trains and railcars, the 77½ m.p.h. schedule of the Flying Hamburger will be approached, though not quite paralleled, on many other lines.

The passenger services in Holland and Denmark are also to be greatly accelerated and increased in frequency by means of diesel-electric railcars and special limited steam trains. The Danish railways have pinned their faith to diesel propulsion for years, and have developed it to a high degree of reliability, but the action of the Netherlands Railways authorities in abruptly placing forty new diesel-electric express units in service, without previous first-hand experience of this type of locomotion, is courageous indeed. Those who have had the opportunity to examine the new units cannot fail to have been impressed by the very careful and ingenious design there manifested, particularly in view of the fact that Holland

has not used diesel power for express working before. There is evidence of very acute observation of the experience of others. The description of these three-car articulated units in our *Diesel Railway Traction Supplement* of April 20 was published before there had been time to observe the results of service trials. From these it would appear that the bold step taken by the Netherlands Railways is likely to be justified.

Canadian National Railways

THE decline in business activity in Canada which had marked the four preceding years continued into 1933, but there was an improvement during the second half of the year. This improvement was, however, insufficient to offset the decreases encountered in the earlier months. From the report for the year 1933, it is clear that the operating efficiency of the Canadian National Railways was higher during the past twelve months. The report is signed by Mr. S. J. Hungerford, President, the Hon. C. P. Fullerton, K.C., Chairman of the Trustees, and Messrs. F. K. Morrow and J. Edouard Labelle, K.C., Trustees. With a fall of 7.81 per cent. in railway operating revenues in 1933 as compared with 1932, the policy of drastic economies which had been pursued since 1929 was continued, and operating expenses were reduced 7.99 per cent. below those of 1932. In addition to staff reductions, further salary revisions and deductions from basic rates of pay were put into effect in 1933.

The elimination of many unprofitable passenger services has brought about a severe curtailment of passenger train-miles, which since 1929 have been reduced to the extent of 9,557,496. The further reduction in 1933 on 1932 amounted to 1,327,972 train-miles. Freight train-miles

have been reduced from 21,357,120 in 1932 to 19,094,866 in 1933. At the same time the continued improvement in operating efficiency is shown by the advance in the number of gross tons per freight train from 1,461 to 1,512, of net tons per freight train from 621 to 632, and of gross ton-miles per freight train hour from 23,133 to 24,000. The accompanying table compares figures for the whole system, including Eastern lines:—

	1933	1932
Average mileage	23,743	23,773
Train-miles	41,694,467	45,046,891
	\$	\$
Freight revenue	112,319,218	120,715,008
Passenger revenue	15,032,432	17,258,919
Total railway revenue	148,519,742	161,103,594
Maintenance of way and structures	30,381,972	30,130,325
Maintenance of equipment	30,610,987	32,216,989
Transportation expenses	68,540,471	78,029,131
Total operating expenses	142,812,559	155,208,161
Net revenue	5,707,183	5,895,433
Gross income	7,553,817	9,896,451
Net income deficit	96,051,854	96,532,459

Co-operative economies were effected between the managements of the Canadian National and Canadian Pacific in accordance with the expressed wish of Parliament. Results so far accomplished are shown in the partial pooling of passenger train services between Montreal and Toronto, Ottawa and Toronto, and Montreal and Quebec. Other economies have resulted from arrangement for joint operations such as switching, car cleaning and freight shed operation at points where duplication of these services existed as well as by the hauling of traffic by one railway for the other. Many other similar projects are under study. The report shows that 60.35 cents of each dollar of gross earnings went in payment for labour, and 8.50 cents in cost of fuel.

PUBLICATIONS RECEIVED

Trains. By Robert Selph Henry. Indianapolis: The Bobbs-Merrill Company. 12½ in. × 9½ in. 110 pp., fully illustrated. Price \$2.50.—This is what, in this country, would be called a "popular" book, and like all good books of the kind, it contains a great variety of very fine illustrations. In spite of the title, it does not deal exclusively with trains, but is, in fact, a condensed history of the American railway system from the days of the *De Witt Clinton* and the *Best Friend of Charleston* down to modern times. Naturally the more attractive sides of the subject are given paramount attention; the building of the first transcontinental railway, the activities of George Mortimer Pullman, and the development of locomotives and rolling-stock are fully dealt with, whereas one seeks in vain for reference to any of the drier subjects, even where these become exciting, as in the case of the Jay Gould scandals. Mr. Henry has clearly a thorough knowledge of the matters with which he deals, and this, coupled with his lucid and concise style, makes us forgive a few lesser slips such as one frequently finds in American books. There are one or two speed records quoted, records which are looked on as apocryphal over here; also, the Delaware and Hudson locomotive *L. F. Lovee* is described as being the first triple-expansion loco-

otive. The last is certainly excusable, in view of the not unjustified secrecy which attended the trials of the late Mr. F. W. Webb's triple-expansion engine on the London & North Western. This is the best book of the kind we have yet seen from America.

Fundamentals of Industrial Administration. By E. T. Elbourne, M.B.E., A.M.I.Mech.E. London: Macdonald & Evans, 8, John Street, Bedford Row, W.C.1. 8½ in. × 5½ in. × 1½ in. 644 pp. 12s. 6d. net.—This is a veritable encyclopædia of the science or art of management, and within its covers and in over 600 pages all the component parts of the subject are brought into a common focus. The book, in the preparation of which the author has been assisted by Mr. K. B. Elbourne and Mr. F. J. Amer, has been written within the framework of a syllabus which has been adopted by the Institutions of Mechanical and Electrical Engineers and the Institute of Industrial Administration, but the interpretation of the subject has been mainly the responsibility of the authors.

The work is divided into two parts, general considerations, and conduct of industrial undertakings. The former comprises historical sections, the scope of modern industry, development of the commercial system, international trade

and exchange, world resources and commodities, financial control, limited companies and other forms of organisation, elements of commercial law, outline of industrial legislation and industrial relations in practice. The second part deals with organisation of production and distribution, development and research, financial statements, industrial accounting, costing and estimating, control of expenditure, statistics and graphs, office organisation and method, general principles of management, division of functions, and last, but certainly not least, although it is the shortest section here, the human factor.

There is evidently much in this excellent compendium which is applicable to railway works and offices as to other industrial concerns, and as the work is arranged with clearness and in a manner which facilitates ready reference to the multifarious topics which it covers, and is provided with a good index and other aids, we can recommend it to all those who may have to deal with any of these problems in the course of their work. It should be added, however, that the work confines itself within the orthodox financial frame of reference, in which money is defined as "the medium of exchange and the standard of value." Nowadays, of course, this definition is incomplete, for, when money fluctuates in value as it does, it can scarcely be regarded as a "standard of value." Further, under modern conditions of machine production, money should be primarily the means of distribution.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for opinions expressed by correspondents

Recovering Lost Time

20, Graham Park Road,
Gosforth, Newcastle-upon-Tyne.

April 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The importance of making up lost time cannot be exaggerated. But it is surely carrying matters a little too far when, as Lord Monkswell suggests is done on the Great Western Railway, the men are "told that if they did not make up lost time they would have to make way for those who would."

Admittedly in a number of districts on all the four groups the enginemen are notorious for their failure to make up, and even maintain, time and there is no doubt that a little "gingering up" is required. But, to tell the men that if they fail to make up lost time they will have to make way for those who do is nothing more nor less than a deliberate incitement by the company for the men to ignore all speed restrictions, &c., when endeavouring to make up lost time. A moment's thought will, I am sure, convince Lord Monkswell of the folly and danger of this policy. By all means encourage the men to make up lost time, but not by threats.

Lord Monkswell says that this action on the part of the G.W.R. sounds "almost too good to be true." For the sake of the travelling public let us hope that it is.

Yours faithfully,

J. R. HAWKES

[We do not share our correspondent's alarm. Obviously a driver's first consideration is the safety of his train, and to ensure this he must obey all speed restrictions and other regulations issued for his guidance.—ED. R.G.]

The Davos-Parsenn Cable Railway

The Heath Dormy House,
Tadworth.

May 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It is interesting to note that the enterprise shown by the Swiss in the building of the Davos-Parsenn cable railway during the height of the world economic crisis and slump has been richly rewarded.

The number of passengers carried during the past winter skiing season, December 2, 1933, to April 29, 1934, inclusive, was 99,664. This compares with 80,674 in the winter season 1932-33, the first season that the railway was open for traffic throughout its entire length. If to this latest figure of 99,664 there be added the 7,000 odd passengers carried in the short summer service from mid-June to the end of September, 1933 —(I am a little uncertain of this last figure and speak only from memory)—it will be seen that the total is far beyond the most sanguine expectations of the promoters who stated in their original prospectus that it was hoped to carry 40,000 passengers in a year!

Yours faithfully,

H. V. FISBERT

Continental Train Punctuality

London.

May 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I must apologise for returning to the subject of the punctuality of Continental trains, but it may interest your readers to know that on a recent visit to France, covering some 3,000 kilometres in express trains on the Nord, Etat, and P.L.M. systems, not one of the trains by which I travelled—and not one of the many others whose arrivals I witnessed at terminal or important intermediate points—was

behind time. This record is really rather more remarkable than it seems, for the trains concerned were some of the fastest in France—such as the 88 and 92 minutes timings between Paris and St. Quentin (95½ miles), the Côte d'azur Pullman and the rapides between Paris and Le Havre (which, considering loads and gradients, have perhaps the most exacting schedules of all)—and a number of permanent way delays (to which the unpunctuality of British expresses is so often ascribed) were in operation. Unfortunately, the Golden Arrow arrived at Victoria at 7.13 instead of the advertised 7.0, although the *Canterbury* had left Calais a few minutes in advance of time.

Yours faithfully,

VIATOR

The Cheltenham Flyer

114, Victoria Road,
Alexandra Park, N.22.

May 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your editorial yesterday, and the recently published letter from Mr. Cecil J. Allen, giving particulars of consistently good running on the part of the Cheltenham Flyer were distinctly heartening to the lover of British operating and locomotive performance. Would that there were in these islands other similar or longer stretches of wholly favourable track and the will to exploit their possibilities to the full!

I travelled by the train on its 501st run in stormy weather and it is noteworthy that an unchecked run was secured which was extraordinarily similar to the time-gaining achievement of the previous day to which you refer: being actually nine seconds quicker, as the start to stop time for the 77.3 miles up from Swindon was 62 min. 31 sec. with 217 tons tare. A maximum speed of 88 m.p.h. was touched twice and—again—No. 5007 *Rougemont Castle* was eased over the concluding stages.

Yours faithfully,

R. A. H. WEIGHT

The Signal Engineer's Department

Brompton Road, Knightsbridge.

May 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—According to the Memorandum of Association of the Institution of Signal Engineers, Article 3 states: "The objects for which the Association is established are:— . . . a. (5th line) the improvement of the status of the signalling profession."

I am afraid this Institution is not paying much attention to this question. For months past now letters in THE RAILWAY GAZETTE have clearly shown how the signal engineer is being looked down on, and in your last week's issue a General Manager of a Colonial Railway informs all readers that he has little use for a signal engineer, giving his reasons.

I agree with your correspondent "Young Signal Engineer," who in his letter of March 8 mentions that the Institute's motto is *Sema phero telauges* ("I bear a shining sign or signal"), and states he fears the Institute is allowing this signal to become dim.

I am sure all members of the signalling profession, either employed or unemployed, would welcome a little more propaganda for the signal engineer. Surely such a body of proficient engineers are not desirous of seeing their members ousted from their work because railway managements in times of economy choose to call signalling unnecessary expense. Even railway managements can be instructed correctly against advice from those who care little for safety.

Yours faithfully,

"A MEMBER OF THE I.R.S.E."

THE SCRAP HEAP

At the Chamber of Commerce Conference Mr. A. de V. Leigh nailed down the financial system very neatly. Industry, he said, consists of half-empty trains and weary, walking people. The people cannot ride because they have no tickets. The number of tickets, however, bears no relation at all to the number of seats, but only to the number of pieces of cardboard somebody is willing to sign.—*From the New English Weekly.*

It is somewhat unusual for a town and its railway station to be in two different countries, yet this does occur at Hay, on the Welsh borderland. At the western end of Hay station the two counties of Herefordshire (England) and Brecknockshire (Wales) are divided by a narrow brook which flows into the River Wye. Therefore, although the town itself is in Wales, the railway station is just inside the English border.

In these days of sustained high-speed running, it is curious to recollect descriptions of the earliest railway locomotives and their achievements. Of those employed on the L.B.S.C. Railway in 1839—weighing in working order 15½ tons and having 5 ft. 6 in. single driving wheels and 14 in. x 18 in. cylinders—we read: "I have now seen with my own eyes the mighty steam carriage rushing along with uninterrupted speed, rivalling the winds in swiftness. I

myself had a ride on the steam monster. The feeling of being shot forward at 20 or 30 miles an hour is awful, and produces that feeling one experiences upon a vessel on a storm-tossed ocean."

Interested Passenger (to platform inspector): "I see there are two engines on this train; is that necessary?"

Inspector: "Oh, one of them's working back."

Passenger: "And the other one working forward, I suppose?"

TIN SOLDIERS IN COLOGNE

There is being held in Cologne at the present time an Exhibition of Tin Soldiers (Zinn Soldaten); whether to keep the military interest alive or not we do not know. It is being held in one of the smaller halls of the permanent exhibition building on the Rhine Embankment and comprises literally thousands of excellently fashioned model regiments, tanks, aeroplanes, motor vehicles and a complete railway system, all, so far as we could judge, faithfully portrayed. Not only the armies of Germany, but also those of Britain, France and other countries, are seen actively engaged in various forms of warfare, and many of the villages, towns, aerodromes and other structures are in a half demolished condition. The railway system, however, appears to have evaded the hand of the destroyer, being

shown intact, although we noticed that in nearly all cases the engines and trains were derailed, not as a result of bombardment or other injury to the track, but presumably to indicate that in warfare even the trains get off the road, in sympathy as it were with the general upheaval going on all around them.

FRUSTRATING THE "FREIGHT HOPPER"

One of the most interesting announcements coming out of Washington, D.C., U.S.A., is to the effect that the federal relief administration is co-operating with the railroads in putting an end to one of the strangest phenomena of the depression years. This is the universal practice of "freight hopping," which has made the railroad trains of the country like travelling human bee-hives.

Riding the bumpers, as in the old days of ordinary bumming, has given place to riding the freight cars in numbers whose totals have never been adequately compiled. Instead of dodging the trainmen and trying to keep out of their sight while getting aboard, this class of hitch-hikers has in recent years boldly swarmed into the freight cars and the flats, as many as could push in. One facetious darkey, when recently asked how many men were travelling on the train from which he had just emerged, answered, "Well, I had to push 'em over to get on."—*From the Bloomington (Ill.) "Pantagraph."*

Ten Dorset children are to have a special train to take them to school. They live on the Wally Moor at Goat-horn. Eight of them have been unable to attend school at all, so now a china clay firm, by whom some of the children's fathers are employed, is to provide a special train on its miniature railway to take them to school at Corfe Castle.



*As the Schoolboy
sees it!*

Two cartoons by Lou Skuse of beginning and end of term impressions, published in the "Canadian National Railways Magazine"



HOME

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

Failure of Transandine negotiations—Danish railways' deficits—Railway exhibits in Germany—Chinese construction work—Improved methods of operation on French railways—Brazilian Government intervention ends strike

ARGENTINA

The Transandine Railway

Mr. Yorke Eliot, General Manager of the Argentine Transandine Railway, was recently in Santiago endeavouring to come to an arrangement with the Chilean Government for the operation of the line between Los Andes, the Chilean terminus, and Punta de Vacas, on the Argentine side of the watershed and frontier, the present railhead to the west of the destroyed section. Negotiations were apparently proceeding satisfactorily until a hitch occurred. According to the Chairman of the Argentine Transandine Company, this was due to the Chilean Government demanding freedom to invade the zone of influence of the Argentine concern, and to employ whatever staff it deemed convenient between the frontier station, Las Cuevas, and Punta de Vacas. As such a demand was objected to by the Argentine company, and was contrary to the wishes of the Argentine labour unions, there was no alternative but to reject it, and, as there seemed no way out of the deadlock, Mr. Yorke Eliot was instructed to return to Argentina. Dr. O'Farrell has also stated that his company is not disposed to continue running the motor car service between Mendoza and the frontier. As, even if funds were available to carry out the work, the reconstruction of the line would take from eighteen months to two years, the only direct means of passenger communication during the coming winter between Buenos Aires and Santiago will be by air.

The Argentine Transport Problem

[This important subject is dealt with fully in a separate letter from our correspondent in Argentina on page 853 also in editorials on pages 827 and 830.—Ed. R.G.]

DENMARK

The Railways in 1932-33

In common with those of other countries, the Danish State Railways had an extremely bad year, 1932-33. The deficit—following one of 35.2 million kroner in 1931-32—amounted to 42.1 millions, which is a record. Road motor competition, improvement of lower class stock and the fact that no

Easter holidays came into the 1932-33 accounts were the principal subsidiaries to general trade depression in accounting for this unfortunate state of affairs. The private railways also show a combined deficit of Kr.2,167,000. Their aggregate length, about 2,600 km., is much the same as that of the State system, but traffic is only half as dense. The largest private line was in difficulties last autumn and a moratorium was suggested. A Government committee has been appointed to report on the prospects of the company.

GERMANY

German Railways and the "German Nation-German Work" Exhibition

In the exhibition "German Nation-German Work," opened in Berlin on April 21 and lasting till June, the group of transport undertakings by their skilful choice of fine exhibits will attract a good deal of interest. The German State Railway, in collaboration with the Postmaster General, the Mitropa and the German Carriage and Wagon Association, shows the latest types of coaches, including one of the Rheingold Express, sleeping and dining cars of modern type, and third class carriages for fast and stopping trains. A corridor coach with third class compartments upholstered in grey-blue plush for the first time, gives the public an idea of what the future third class accommodation on express trains will be like.* Diesel railcars either of the bogie type (410 h.p., 110 km.p.h.) or four wheeled for working on branch lines, light rail buses, &c., are to be seen, as well as special goods vehicles, e.g., a covered wagon of 15 tons loading capacity running on international express trains, flat wagons fitted with automatic discharging appliances, wagons of high carrying capacity for grain, bogie mail vehicles and a new tractor for the conveyance of railway wagons on the road from the yard to works without private sidings.

Models show the wide extension of the urban Berlin services of the Reichsbahn by the future north-south underground line and the plans for the electrification of main lines. A modern express locomotive in miniature demon-

strates the results of tests arranged with models in the wind tunnel. The signal engineer will be interested in being able to study the new methods of protecting road traffic at a level crossing automatically by flashlight, and a model of the standard block system. Of particular operating interest is the speeding up of services in 1934 compared with former years. The co-operation of rail and road is shown, and also that of rail and air by a parcel service arranged between Berlin and Barcelona. In close conjunction with the Reichsbahn, the Reichsautobahnen administration demonstrates by models, diagrams, and maps the extensive scheme for a network of motor roads all over the country. The exhibits give an impressive idea of the confidence with which the future development of transport is regarded in Germany.

NEW ZEALAND

Improvements at Frankton Locomotive Depot

Extensive locomotive depot improvements have recently been taken in hand at Frankton Junction, the principal inland centre on the northern section of the North Island main trunk line. These have been necessitated largely by increased traffic resulting from the new Stratford line, and the first part of the programme, providing additional shed accommodation for six tender locomotives, is already practically complete. There are at present about 50 locomotives stationed in the Frankton District, and 18 of these can now be housed in the shed at its headquarters. Several improvements will be incorporated in the interior of the new shed, including an electrically operated wheel drop and a new and more efficient type of air compressor. With the improved yard lay-out, engines can now be run straight through the shed to the new turntable. It is also proposed to remove another of the railway houses at the rear of the shed, and extend further lines to the turntable. Among other proposed improvements is an elevator for coaling the locomotives, which will greatly reduce manual labour.

CHINA

Shanghai-Hangchow-Ningpo Railway

Steps are being taken to complete the line between Hangchow and Shiao-shing which will necessitate the construction of a bridge across the Chientang River in the vicinity of Zahkow and Shao-shan. The line from Ningpo terminates at present at the Tsao Ngo river where the abutments and piers of an incomplete bridge to connect the present terminus with Shiao-shing have stood since the beginning of the great war when the work ceased. At present passengers for the Ningpo section of the

* See illustration on page 735 of THE RAILWAY GAZETTE of April 27.

railway must travel by boat from Shanghai to Ningpo spending a night on board.

Canton-Hankow Construction

Excellent progress is being made with the construction of the Chuchow-Shiuchow section of this line, four of the six tunnels now having been completed. It is expected that platelaying will reach Tashihmen from Chuchow by July and that this length of line will be opened for traffic next November, according to the *Chinese Eastern Bulletin*.

The survey of a new branch line from Pengpu to Chengyang, under the auspices of the Tientsin-Pukow Railway, is now in hand.

FRANCE

Ceinture Reorganisation

Plans for the reorganisation of the Paris Ceinture lines were recently approved by the Supreme Council (Conseil Supérieur) of the French railways. These lines, known as the Petite and the Grande Ceinture, serve the Paris district, one running as an inner circle inside the city boundary and the other in the outer suburban area. They have long been run at a loss, the deficit growing with increased labour costs and competition due to motor transport. Operation of the lines will be transferred from the present operating syndicates to the Nord, Est and State systems, which will take over all the employees. Considerable economies will be effected on the administrative side. It is estimated that at least 7,000,000 francs (£87,500 at 80 francs to the £) will be saved in three years without detriment to the rights of the present personnel.

The Council also authorised the State Railways to reduce rates for the carriage of certain goods from Havre and Rouen to Paris in order to meet motor and waterway competition.

Quarterly Hire of Vans and Trucks

Vans or open trucks at fixed rates per kilometre may now be hired for periods of three months on all the railways. The vehicles may be adapted by means of interior fittings by the hirer to make them suitable for the transport of special categories of goods. The rates, all charges included except a small registration fee, are per kilometre for each wagon: 3 francs per kilometre for an 8-ton wagon; 4 francs for a 12-ton, and 5 francs for a 15-ton wagon.

The system of indicating the names of railway stations to air pilots described in THE RAILWAY GAZETTE of December 1 last and originally installed on the line between Paris and Deauville on the initiative of the Paris newspaper, *Le Journal*, has now been extended under the auspices of *Le Matin* to the line between Paris and Le Touquet.

Buffet-bar cars are meeting with

success on the Nord system, and the company now announces that by arrangement with the International Sleeping Car Company it has placed one in traffic in the train running from Paris to Tourcoing at 8.46 a.m. and returning from Tourcoing at 6.19 p.m. It is available for all classes of passengers, enabling them to obtain refreshments at very moderate prices.

Through Connections in North Africa

Since M. Ponsot, Resident-General of Morocco, officially opened the last Fez to Taza section of the line connecting Algeria and Morocco, the entire North African line from Gabes in Tunisia to Marakesh in Morocco has been made available for passenger and goods traffic. Tourists can now travel by rail from Gabes to Marakesh, via Tunis, Constantine, Algiers, Oran, Tlemcen, Oudjda, Taza, Fez, Meknes, Rabat and Casablanca. There is, however, no fast and through train service, passengers sometimes having to change trains, some of which have only third and fourth class accommodation. As new lines in a dry country like Morocco require months for the permanent way to consolidate sufficiently to carry fast trains, the traffic is still comparatively slow. At present it takes thirty-six hours to travel from Algiers to Casablanca, but the Moroccan railways will gradually speed-up the service. Within a year, as the line is improved, it is expected that the time for this journey will be cut down to twenty-six hours, and fast trains will then be run through direct from Gabes to Marakesh.

BRAZIL

Strike on Leopoldina Railway

For about 48 hours from midnight of April 6 the train services of the Leopoldina Railway were partially paralysed by a strike movement initiated by a small group of the company's employees, in consequence of the refusal of the management to accede to demands for increases and adjustments in wages, demands which were deemed unreasonable, and which were not supported by the men's own accredited "syndicato," or trades union. The area of the strike was limited to the States of Rio de Janeiro and Espirito Santo, as, apart from the Locomotive Department shopmen at Porto Novo and São Geraldo, the staff working in the State of Minas Geraes remained loyal. Trains therefore ran practically as scheduled in the latter zone, but between Rio and Petropolis and in the suburban area (Barão de Mauá to Caxias) the entire service was suspended, while no long-distance trains could be despatched from Rio itself. Although sporadic instances of sabotage, such as removing rails, placing sleepers and stones on the track, derailling wagons, &c., occurred, fortunately without disastrous conse-

quences, the outbreak was on the whole a pacific one, and the co-operation of soldiery and military police prevented disturbances of a serious nature.

As a result of direct intervention by the Brazilian Government, the strike was called off at midnight on April 8, after an agreement had been signed by both company's and men's representatives, binding each party to accept the decision of the arbitration committee which the Government set up to examine and report upon the whole question.

Paulista Railway Company

A special commission from the important town of Jahú in the State of São Paulo, headed by the Mayor and composed of some of its prominent citizens, presented a petition at the headquarters of the Paulista Railway, asking for the company's line from Ityrápina to Baurú to be diverted in such a way as to take in Jahú *en route*, since at present their town possesses no through services, being situated on a branch leaving the main line at Dous Corregos. The Paulista administration explained that the construction of the necessary spur line, giving Jahú direct communication to Ityrápina and Baurú alike, would cost 2,300 contos, a sum which at the present time it was deemed unwise to disburse. However the Municipality of Jahú undertook at once to pay the desired sum to the Paulista in four half-yearly instalments, raising for the purpose a loan which had already been authorised by the São Paulo State Government.

Central of Brazil Railway

On April 6-7, the Bello Horizonte-Rio night express (due in the Federal Capital at 10 a.m.) was running to its normal schedule, when a serious accident occurred between the stations of Mantiqueira and Santos Dumont, while the train was descending the bank known as the "Serra da Mantiqueira," the engine, together with a postal-van and a second-class coach, leaving the rails and plunging down the steep embankment. As a result there were seven deaths (including the driver and fireman), while 30 persons suffered injuries, and it was only the fact of the next coach remaining suspended precariously at the top of the abyss that prevented the casualties from being far more numerous.

CHILE

Floods in Antofagasta District

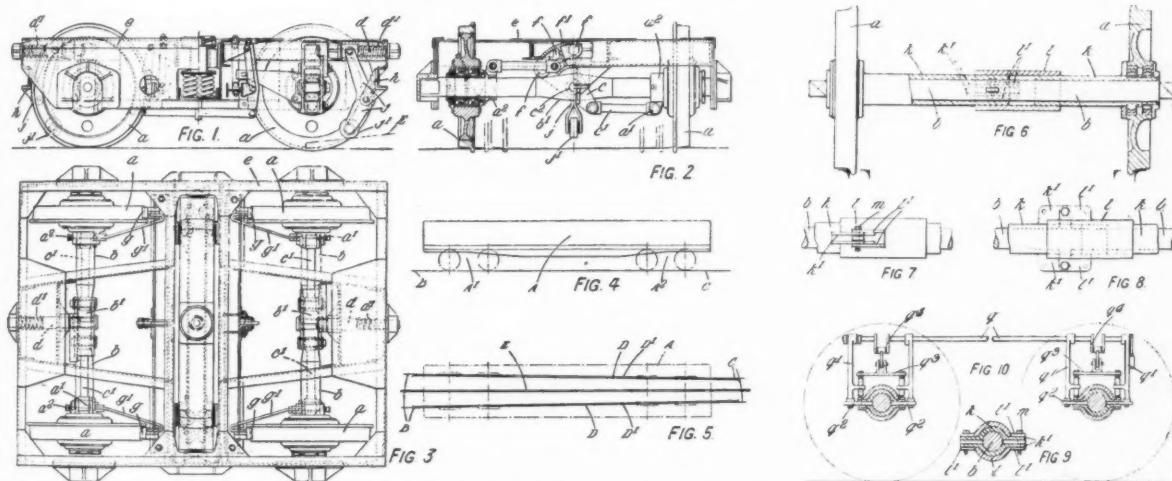
Much damage was done recently in the north of Chile, particularly in the Antofagasta district, by torrential rains and consequent floods. The nitrate zone suffered considerably, the storm being the worst experienced in the district for many years. Traffic between Antofagasta and Bolivia had to be suspended for a week owing to the damage to the track by the floods, and there were several casualties, five deaths being reported.

A GAUGE-ADJUSTABLE BOGIE

IN countries where the railways are of several gauges much time is wasted and a great amount of energy is expended in transferring goods from the vehicles of one railway to those of another. Inconvenience to passengers also results, while the benefit to be derived from train ferries will obviously be much reduced, if a large proportion of the vehicles carried across the water must, after all, and before going far, be unloaded into vehicles of another gauge. Carriages and wagons which could be run straight through via a short connecting track of tapering gauge would overcome all these inconveniences, and the knowledge that such vehicles would be useful in many parts of the world has led to the invention of the gauge-adjustable bogie of the accompanying illustrations. The ideas portrayed are due to Mr. William Cochrane, who advocates the use of a very slow taper, say 1 in 125, on

gence of lugs solid with the fixed axle *b*. Sleeve *l* carries lugs *l*₁ and the gauge is altered by bringing holes in lugs *l*₁ and *k*₁ into correspondence with one another and with holes centrally disposed on the longitudinal axis of the bogie in the lugs projecting from *b*. Taper pins inserted through all three sets of lugs serve to lock the wheels in the desired positions. These pins may be operated manually or automatically. As there is nothing to ensure a central disposition of the bogie over its wheels once the taper pins have been withdrawn, a guide rail must be provided between the running rails and this must be engaged by fingers projecting below the bogie frame at each end, before the unlocking of the wheel sleeves is permitted. Instead of fingers grooved rollers may be used.

With both the constructions illustrated fairly simple provisions serve to ensure the operation under all conditions



the rails leading from one gauge to the other. In the bogie of Fig. 2 the wheels *a*, which are carried rotatably on longitudinally slidable sleeves *a*₁, can be locked at several fixed distances apart by swinging the levers *c* into different positions and holding them there. These levers have three or more holes *f* drilled through them, there being a hole in each for every gauge the bogie is designed to accommodate, and spring loaded plungers *d*, Fig. 1, enter these holes and so secure the levers. The plungers are withdrawn automatically by levers *j*, as the tapering track is approached, for rollers *j*₁ ride up on to a ramp situated between the running rails where the change of gauge occurs. The springs *d*₁ are simultaneously compressed. To prevent too rapid an approach of the wheels, check rails are provided where the track is tapered, these beginning somewhat before the gauge change commences and before the ramp is able to withdraw the locking plungers *d*. The check rails end at a point beyond the termination of the ramp so that the axial restraint on the wheels is continued until plungers *d* have been introduced into the holes in *c* corresponding to the new gauge. During the passage from a narrow to a wide gauge it is the check rails which must drive the wheels outwards.

An alternative wheel mounting is shown in Fig. 6. Here the sleeves *k* carrying the wheels are much longer, and, solid with the right hand one, is a larger sleeve *l* into which the left hand sleeve may telescope. Sleeve *l* is slotted to admit lugs *k*₁ on the entering sleeve *k*. The latter sleeve is also slotted through its lugs to allow the emer-

gence of the brakes and lighting dynamos, but it is to be noted that the satisfactory engagement of holes and locking pins necessitates, with the arrangement shown in Figs. 1, 2, and 3, the use of a very stiff bogie frame and the abolition of sprung axles. Springs can only be introduced as shown between the bolster and the swing plank, and a great deal of unsprung weight must be tolerated. It is doubtful if the load carried by the bogie shown could be made to fall on more than three wheels, and it is felt that the inventor is right in preferring the mechanism depicted in Fig. 6, which, carefully contrived, should afford the possibility of employing more or less conventional springing.

In the simplest form of the invention which we have been privileged to see, there is the prospect of being able to use standard axleboxes in addition to conventional springing, and the wheels are able to rotate differentially as in the construction of Fig. 6.

IMPROVED FACILITIES IN THE MIDDLESBROUGH DISTRICT.

—In order to cope with the increased passenger traffic following the introduction in May, 1933, of a half-hourly service between Darlington and Saltburn, the L.N.E.R. proposes to carry out a scheme of improvements, including the provision of a permanent platform, with waiting room, on the up side of Redcar station, and a footbridge connecting the platforms. At Redcar East halt and Marske platforms are to be lengthened, and at Eaglescliffe a new cross-over road provided at the north end of the station.

JAPANESE COMPETITION

By Sir Harry McGowan, K.B.E., Chairman, Imperial Chemical Industries Limited

A specially contributed article discussing a matter of vital importance to British industry, based on Sir Harry McGowan's recent visit to the Far East

THERE has probably never been a trade phenomenon which has developed so rapidly as Japanese competition. Four years ago it was hardly showing above the Eastern horizon, a little cloud no bigger than a man's hand, but now it has covered practically all the markets of the world.

It may be interesting to consider for a moment what lies behind this development, and what has enabled Japan to develop a trade offensive with such amazing speed and to undercut older established trade rivals so drastically.

The driving force is supplied by Japan's need to sell goods abroad in order to maintain some equilibrium in her trade balance. Her rapidly-growing population, and her growing expenditure on armaments, make it imperative for her to sell more goods abroad. The second factor is the depreciation of the yen. Originally forced on her by necessity, a depreciated currency has advantages which Japan has not been slow to recognise. As we know in Great Britain, the depreciation of the £ sterling, following the abandonment of the gold standard, enabled us to recover a substantial part of the international trade we had lost during the preceding year when the £ was over-valued. Roughly speaking, the £ was depreciated in those days by about 35 per cent., but Japan has outbid us in competitive exchange depreciation, and the yen now stands at a gold discount of 63 per cent., without any guarantee that it will not go lower.

The next important factor is the efficient organisation of those Japanese industries around which competition principally centres, and the deliberate planning of her export campaign. Japan is relatively to ourselves, and even to the U.S.A., a new country, which has sprung, almost fully armed, into the industrial arena. She has, therefore, been able to build factories on the latest plan, incorporating the most modern machinery, and in short, to pick and choose among international industrial practices, and adopt that which was best suited to her needs. She has shown great wisdom in buying only the finest and most up-to-date types of machinery. She has organised her industries in large-scale units. Further, she has evolved a system of industrial and Government co-operation in the conduct of export campaigns, by which means the advantages of exchange depreciation and efficient production are translated into concerted efforts overseas.

There has been much loose talk of long hours and low wages in Japanese industry. It is true the Japanese work long hours. It is true that they live on less wages. It is true also that their standard of living is lower, to our Western eyes. But while I was in Japan last winter, I made a tour through Japanese factories and was able to find no outward signs of malnutrition, lack of physical energy or discontent among the workers, which might be expected to be evident were they really overworked or under-nourished. As the Japanese Ambassador said the other day, though the Japanese worker does not eat roast beef and potatoes, he would not choose them were he able to afford them. The Japanese worker keeps fit and happy on his—to our minds—inadequate ration of fish, rice and vegetables.

Price versus Quality

There is one more factor which makes for Japan's success, and that is her realisation that the needs of the

present age are for goods where price is more important than quality. In a time of world depression, price is the decisive factor in purchasing. Japan has realised this more than any other nation. Her manufacturers and merchants have also realised the necessity of studying the needs of individual markets, and have been at considerable pains to give each customer what he wants at the time and place that it is wanted, and patterned, designed and packed in a manner to please his particular fancy. The Japanese deserve credit as pioneers. They study the customer's demand for prompt and even immediate delivery: they quote in his own language and not Japanese, and express units of quantity and price in the measurements of his country and not their own.

The strength of Japanese competition lies in the interdependence of these factors. It is impossible to say which of them counts most, since they are all co-ordinated to produce the desired result. How far they have succeeded we already know.

There is an impression that the growing cultivation of athletics and outdoor exercise among the Japanese will result in an improvement of physique and lead of necessity to a change in the national diet, and eventually to a turn-over from rice to wheat. My own feeling is that the wish is here father to the thought. So far as I am able to judge, there is no likelihood of the Japanese standard of living being materially improved in the near future.

The Chinese Market

Then there is a disposition to think that the intrusion of the Japanese into markets so far away as our African colonies, the South American republics, and even the United Kingdom itself, is due to a falling off in the demand of the Far Eastern and peculiarly in the Chinese market; but this is only partially true. The Chinese market, with its population of over four hundred million, is an enormous one, but it could only attract Japan's attention and absorb her energies if it developed a demand more rapidly than Japan was able to supply.

Another ill-founded belief is that Japan's present competitive activity is merely an effort to get rid of surplus production while she builds up her manufacturing industries ready to meet the demand from Manchuria. It is certain that Japan will develop Manchuria as energetically as she is able, but for many years Manchuria must be looked upon as a source from which Japan will draw certain raw materials, rather than a market which will absorb her manufactured goods. In any event it will be a market which she will take care to restrict to her own nationals as far as possible, especially since Japan already produces so many of the commodities for its development. Certain articles, however, she does not yet produce as efficiently as Western rivals—motor cars, for example—and it may be possible for competing manufacturers in such lines to do business. So far as chemicals are concerned, Japan is almost in a position to supply the needs of the Manchurian market right away, nor is it likely that the further development of Manchurian demand will overtax Japanese capacity to supply. The development of the Japanese chemical industry is not the least remarkable feature of her recent expansion.

The force and extent of Japanese competition cannot

be explained away in this manner. It remains to be seen what Great Britain can do to meet it effectively.

One thing is certain: if Japanese prices are lower than ours, it is no use our wasting time in idle complaint. It behoves us to take prompt and vigorous steps to put ourselves as far as possible on a competitive basis. If we are the progressive nation that we have always claimed to be, we should not be too proud to learn from the methods of newer rivals.

Obviously, there are some directions in which British industry of itself can do nothing. British producers cannot, and would not if they could, depress the standard of living of their workpeople to the level of that of the Japanese, adequate though this may be for an Oriental race living in an Oriental climate. But a different standard of living does not mean that we cannot do business with Japan. Standards of living are no bar to trade, as witness the wide divergencies existing amongst people in England who regularly do business with one another.

Industry finding its own Salvation

British manufacturers cannot take steps to stabilise the exchanges. That is a matter to be left to Governments. But there are directions in which British industry can, and must, work out its own salvation. Can we afford to do less than the Japanese are doing to give service at a price which customers are now prepared to pay? Can we afford to do less than they are doing regarding the organisation of their industry into large units, and the effective planning of export trade? The benefit of large organisations is not merely theoretical.

While I was in Japan last winter, a reasonable reciprocal arrangement was concluded between British and Japanese manufacturers of synthetic nitrogen. The speedy and successful conclusion of this arrangement was, I am convinced, due largely to the fact that the industry in Great Britain is organised through the British Sulphate of Ammonia Federation, of which I.C.I. is the sole selling agent. This enabled a few leaders on the British side to meet and discuss matters with complete authority with an equal number of representatives of the Japanese industry.

Co-operation with Japan

This leads me to the point which I have already laboured on more than one occasion, and that is, the vital necessity for more meetings between British and Japanese industrialists, making for more harmonious trade relations. The Japanese as well as ourselves would prefer co-operative action to the present insensate competition. It is up to us to do all we can to cultivate this feeling, so that we may correct and control the situation. I put it again to British manufacturers that the time is ripe to express to the Japanese our desire to come to understandings with them over as wide a field as possible. As an earnest of my conviction, I am sending out to Japan this summer a strong commission representative of I.C.I. to discuss a number of matters in the chemical field. Not only will it be to the profit of British industry to take this course, but unless some such action is taken, and taken soon, conditions in the next year or so are likely to become more acute.

AUTOMATIC BLOCK SIGNALLING, NORTHERN RAILWAY OF SPAIN

THE intensity of the traffic on the Northern Railway of Spain between Madrid (Principe Pio) and Villalba has led the company to introduce automatic colour light signalling on that section, in order to eliminate the delays to which the retention of the ordinary manual signalling was beginning to give rise and to enable a closer train headway to be maintained without having to lay down additional lines. The first application of the automatic block system was made between Madrid and Pozuelo, a distance of 9 km., in 1927 and was undertaken chiefly to familiarise the running and maintenance staff with this method of working before adopting it on an extended scale. The extension to Villalba, a further 29 km., was completed and brought into use in August, 1930. An account of the work has been written by Señor Alberto O'Connor in *Ferrocarriles y Tranvías*, from which the following particulars are chiefly extracted.

The system chosen was the three-aspect colour light worked on the "normal clear" principle. It is noteworthy that this is unlike the installation on the M.Z.A. between Madrid and Villaverde, where the "normal danger" method was adopted, the signals there being

of the Ducousso vane pattern, as used on the Midi Railway of France. There are 61 signals in all and 30 block sections in each direction, one of which terminates at an ordinary signal, and four intermediate stations with cross-over roads, of which one also controls a double line junction. The spacing of the signals has been arranged as far as possible to meet all the conditions of speed, gradient, curvature and visibility, although the signals

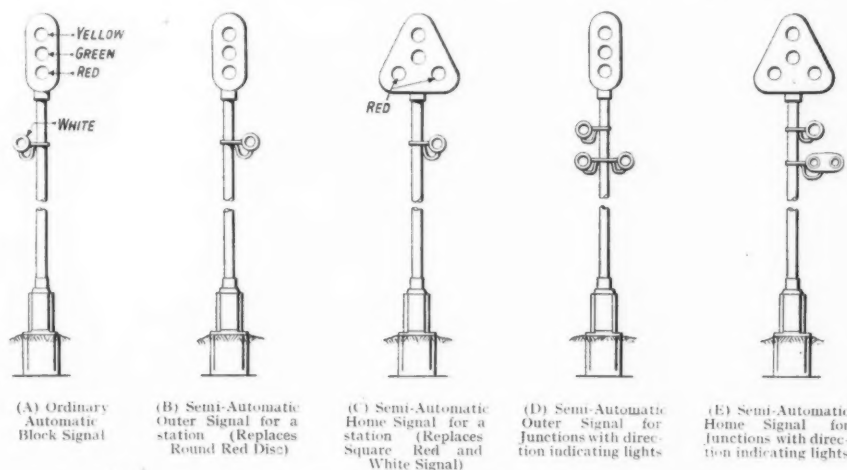


Fig. 1—Various types of signal installed

protecting stations necessarily have had to be fixed at definite locations according to rule.

The signal aspects adopted are interesting, as they have had to be selected to harmonise with the existing mechanical signal practice on the railway, where square and round disc signals of French pattern are used, with white light for "clear." In consequence the meaning of two of the colours used is exactly the reverse of that to which we are accustomed in England, the indications being as follow:—

Red ... Stop.
Green ... Caution : Prepare to stop at next signal.
Yellow ... Proceed.

The yellow is at present regarded as the equivalent of the white in the ordinary signals, but should a change

shown in Fig. 2, enabling the control of the signals to be understood without difficulty. The whole of the apparatus is operated by alternating current and the track relays are of the three-position type giving polar control via the track circuit to the signal in the rear, with a slow-acting relay to prevent the red light appearing momentarily when the signal ahead changes. In Fig. 2 the two signals for the upper line are at "clear" (yellow) and on the lower line the train on the left is holding signal B.4 at "stop" (red) and therefore the signal in the rear, B.6, at "caution" (green). The stations covered by this installation, with the exception of Villalba, where a lever frame existed, were fitted with Bouré key interlock-

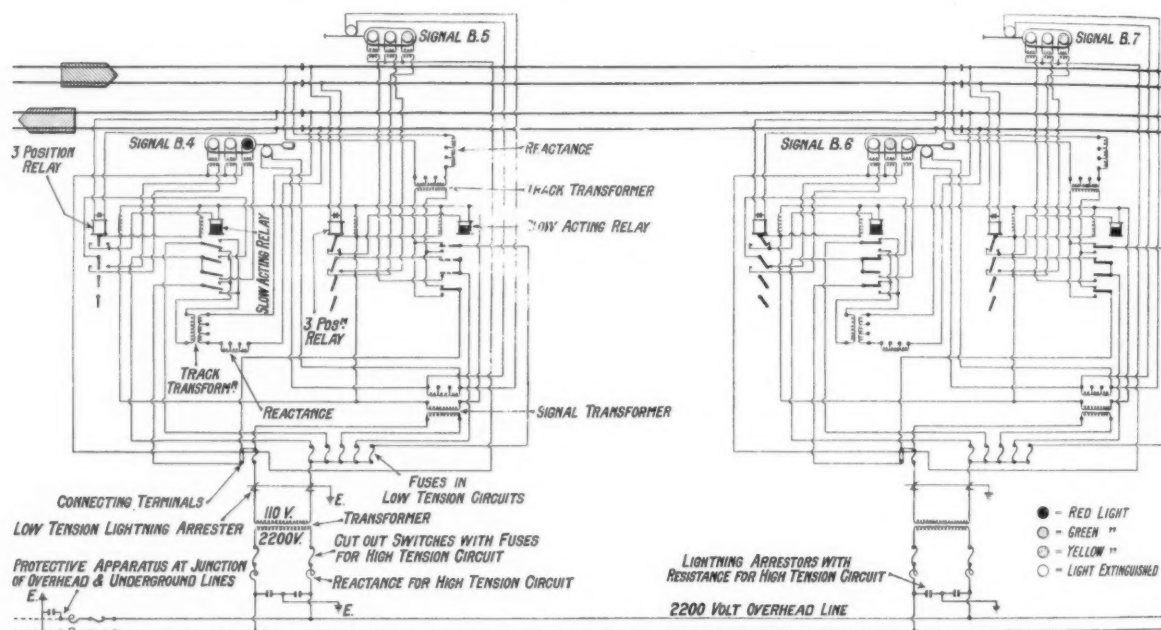


Fig. 2—Electrical connections with two trains on line

to the red-yellow-green system be eventually decided on the signals will be ready at once to use in that way. Absolute stop signals controlled by a signalman show two red lights placed horizontally, corresponding to the red and white chess-board home signals used elsewhere; the other signals show only one. In Fig. 1 the different types of signal installed are shown, viz:—

- (A) Ordinary automatic signal.
- (B) Semi-automatic outer signal for a station.
- (C) Semi-automatic home signal for a station.

All these carry a white marker light, to the left in the case of A, to the right in the other two. B and C take the place of the ordinary round and square disc signals. D and E are used at facing junctions instead of B and C and show when at "proceed" two white marker lights, vertical if the direct route is given, horizontal if the diverging route is set. These lights take the place of the older direction indicators. When the signal locations are opposite, or very near to, one another the apparatus for the two is grouped in a mechanism case at the foot of one of the signals, the other having a plain tubular post. The background plates and base castings are painted black, and the posts in alternate white and black bands. It was not thought advisable to adopt the approach lighting principle.

The electrical connections with two trains on line are

ing and this was modified to give an electrical control over the home signals showing the double red lights, and the usual illuminated diagrams were provided. At Villalba the lever frame was equipped with the necessary contacts to replace the old mechanical apparatus.

Great care has been taken to ensure a reliable supply of current. The main source of energy at Madrid is derived from the Madrileña Electric Union at 15,000 volts, transformed down for the main signal supply to 2,200 volts and again at each signal to 110 volts, with suitable low voltage tapplings on the track and signal transformers. An oil-electric generator set, automatically started, is provided at Principe Pio station, as a reserve in case of failure of the Madrileña supply. The section between Las Matas and Villalba is supplied from the Guadarrama hydro-electric station at 15,000 volts with the necessary transformer equipment at the former station, but automatic change-over switch apparatus is installed which connects the section to the Madrid-Las Matas feeders should a failure occur. If absolutely necessary the whole line can also be fed from the Guadarrama station. It is intended later to put in a reserve set similar to that existing at Principe Pio. The installation has given complete satisfaction since it was brought into use and has considerably improved the running of the trains on this important part of the Norte main line.

RAILWAYS AND ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Co-ordination

ONE of the most telling illustrations of the beneficial effects of co-ordination—and co-operation—is now to be seen at railway stations all over the south of England. It takes the form of two posters, which can be used either in combination or separately, and they show the rail and road routes in the areas served by the Southern and Great Western Railways and their associated road motor companies. The area depicted is that south of a line running through Aylesbury, Oxford, and Wickwar (just north of Bristol), and spreading from Land's End to Broadstairs, but omitting the London Passenger Transport Area as well as that part of the eastern counties which would otherwise come into the map. That sounds prosaic enough, but the maps have been drawn in a style so attractive that there is no doubt all who catch sight of them will find their interest aroused and immediately commence planning little outings, for the maps certainly show how easily the whole of the south of England can be travelled with the combined aid of rail and road. The routes of the rail and road services are shown in different colours and, in the case of joint road services, a change in colour indicates the line of the area agreements between the two operating companies. Actually there are thirteen road companies associated with the two railway companies concerned in the south of England. In view of the success of this piece of co-operative publicity, it is interesting to learn that it was originally planned by the Southern Railway to cover its Eastern Section. Afterwards, it was decided to extend the scheme to embrace the whole of the Southern Railway and its associated road companies.

Then, in view of joint interests in some cases, the Great Western Railway became involved, and it was suggested to that company that it and certain of its associated companies should also be indicated on the map. That course was agreed to and the cost has been shared by the companies interested, and we congratulate all concerned on a very useful result and one which should be a means of increasing traffic.

While on this subject, mention may also be made of the joint time-tables which are displayed by the Southern Railway, showing the times of the road motor services from towns in Devon and Cornwall connecting with trains from and to London, Salisbury, and Exeter. This is yet another piece of fruitful co-ordination work, and we note with interest that the road services shown include not only those of the associated concern—the Southern National Company—but also those of a non-associated company.

Progress of Automobile Engineering

IT was a happy choice of the Council of the Institution of Civil Engineers to ask Sir Henry Fowler to give the fortieth James Forrest lecture, which commemorates the excellent work of a former secretary of the Institution, and in dealing with the progress of automobile engineering, Sir Henry had a subject with which he has been closely associated for nearly as long as there has been motoring on a practical scale in these islands. At the same time the magnitude of the task entailed that it was only possible to mention the outstanding points, and there was no time to deal separately with passenger or commercial



*M.A.N. diesel omnibus surmounting mountain pass approximately 8,000 ft. above sea level.
These buses are built with seating capacities ranging from 22 to 70 persons*

vehicles. It was not surprising, especially in view of the fact that Sir Henry has occupied the Presidency of the Institute of Metals, that he dealt at some length with the very valuable progress in that department of metallurgy which is concerned with the production of special steels and light alloys, while he also briefly reviewed recent developments in transmission, drawing attention to the Wilson pre-selector gear, the Austin-Hayes gradual change speed gear, the Leyland hydraulic torque converter, and the Daimler fluid flywheel. In conclusion, Sir Henry quoted a friend's statement that forty years ago cars were extremely simple and extremely unreliable; now one could say with truth they were generally extremely complicated and left nothing to be desired as far as reliability was concerned. The change had taken place because of the careful thought and design put into all parts of the automobile, to the improvement of the materials used and the roads on which the vehicles run. In addition, it was probably due to the universal and widespread use of automobiles and to the fact that only if a car is absolutely reliable is it likely—even when cost has to be considered—to have any very large sale. It was an ambitious effort to review such a large subject in one lecture and Sir Henry certainly succeeded in making it extraordinarily interesting.

Celebrations

AFTER such a rapid review of automobile history, provided by the lecture just mentioned, it was fitting to receive a booklet from the Northern General Transport Co. Ltd., which is associated with the London & North Eastern Railway, commemorating the 21st anniversary of the beginning of the concern's activities, the first service having been inaugurated by the Gateshead & District Tramways Company on May 7, 1913, with a fleet of buses running between Low Fell and Chester-le-Street. The booklet contains a succinct history of the development of the concern during a couple of decades and, while that is intensely interesting, the many pictures bring out what great changes have been made in the size and accommodation of road vehicles during the period. There are some illuminating statistics, too, from which it appears that the 16 vehicles of 1913 in that year ran 314,283 miles and carried 1,371,389, while last year the 386 vehicles ran 11,989,672 miles and carried 40,055,893 passengers. The Northern Company has a highly organised maintenance system, and it is mentioned with justifiable pride that during 1933, in round figures some 1,200,000 individual journeys were made and on only 80 occasions did vehicles fail to reach their destination on schedule time or within a few minutes of it—a wonderful example of reliability under the onerous conditions of maintaining a public service under all weather conditions.

Road and Rail in Switzerland

BRIEF reference was made in THE RAILWAY GAZETTE of February 16 to the Bill which it is expected the Swiss parliament will pass during the coming session. It has been drawn up as the result of an agreement between the interested parties and it is proposed to place the co-ordination of road and rail activities in the hands of a co-operative society to be organised on the lines of the "Sesa" (Suisse Express, S.A.), of which licensees will be members, with 50 per cent. of the shares allotted to the railways, 25 per cent. to the motor transport companies and 25 per cent. to business firms and forwarding agencies. The shares have been fixed at Frs.200 bearing interest at 4 per cent. The executive committee will consist of 9 members, three appointed by the Federal Department of Railways, three by the holders of licences and one each by the Swiss Association for Industry and Commerce, the

Swiss Trade Association and the Swiss Farmers' Union. The Board of Administration will nominate a neutral President.

The penal statutes are very severe and a strict control will be kept regarding the unauthorised transport of goods or animals by unlicensed carriers, outside the stipulated radius of 10 kilometres, measured by the road, allowed to each Commune. This radius can be reduced by the Federal Council in the interests of a subsidiary railway. Business undertakings will be free to transport either goods or animals for their private purposes by their own vehicles. On the other hand, firms and private individuals will not be allowed to effect transport of goods or animals for a third party, for payment, over a distance of more than 10 kilometres, except when there is no railway service in that locality or when no licences have been delivered for the regular transport of goods. Fines for the transgression of the new law will range from Frs.1,000 to Frs.3,000, and the fines will be divided between the Confederation and the Canton in which the infringement occurred.

The licences will be of two types: Type "A" (normal) for the transport of goods and animals of every kind, and type "B" (special) for the transport of furniture and goods for removal purposes when special vehicles are required.

It is anticipated that the introduction of the licensing system will promote a marked development of the door-to-door services, which, it is hoped, will extend in time over the entire country, taking in approximately 4,000 localities. All transport of goods for distances of less than 30 kilometres is to take place by road, except where the consignor has expressed a specific wish for it to go by rail. For distances exceeding 30 kilometres, the transport will take place by rail, except in the case of certain fragile articles, such as household goods, furniture or valuables. For long distances over rail and road, the carriage of such goods on the road will as a general rule be given over to holders of licence "A."

The railways are to place at the disposal of the co-operative society their goods-warehouses, loading plant, &c., and it is expected that once freed from local goods traffic, the railways will be able to realise considerable economies in respect of their staff at intermediate stations, which will be transformed into stopping places for motor vehicles. In this manner it is estimated that, in time, the railways will be in a position to reduce the number of their employees by 5,000 to 6,000.

The agreement, which is terminable on December 31, 1943, can be denounced by either contracting parties one year before the expiry of the delay, otherwise it is automatically renewed for an indefinite period. As from January 1, 1944, each contracting party will be at liberty to denounce it for the end of any calendar year, six months' notice being required.

CITY BAN ON "HEAVIES."—Following on a recommendation of the London and Home Counties Traffic Advisory Committee, the Minister of Transport is proposing to prohibit, by regulation, the driving of heavy locomotives on certain streets and bridges in the City of London between 9 a.m. and 7 p.m., and on all other streets and bridges in the City. It will apply to self-propelled vehicles, not constructed to carry a pay load, and weighing, unladen, over 11½ tons. Objections have to be made not later than June 6.

NO PAYING PASSENGERS IN PRIVATE CARS.—An amendment to the Public Vehicle Act in the province of Ontario will prevent a private motorist from advertising for paying passengers to accompany him on his journeys unless he has a passenger-carrying licence.

Passenger Vehicles for Country Services

Some particulars of double-deck buses recently supplied to the order of the London Passenger Transport Board with Metropolitan-Cammell-Weymann bodies on A.E.C. chassis

AMONG the vehicles recently obtained by the London Passenger Transport Board there are a number which indicate an extension of use of double-decked coachwork on services running well outside the Metropolitan area, using that term in the ordinary sense. There are twelve of the type illustrated and they are to be used on the route which runs out from Bromley, over Westerham Hill to Reigate. Incidentally, too, it may be noted that their overall height is low enough to pass under the railway bridge at Oxted which has hitherto been possible only to open top double-deckers.

The vehicles are arranged to seat 48 passengers, 26 in the lower saloon and 22 on the upper deck, the bodywork being by Metropolitan-Cammell-Weymann Motor Bodies Limited on their patented system of all-metal, light weight construction of which details were given in THE RAILWAY GAZETTE of September 23, 1932. The body weight has been kept down to 2 tons 14 cwt., to effect which meant the elimination of all unnece-



A general view of the low-height double-deck motor bus for L.P.T.B. country services, built by Metropolitan-Cammell-Weymann Motor Bodies Limited



The interior of the lower saloon of the new country service double-deck bus built on the M.-C.-W. principle. The vehicle has seats for 48 passengers

essary metal. Inspired by that consideration the seats are of special design including steel tube frames and Dunlopillo upholstery, a combination which, while providing a comfortable seat, weighs only 25 lb. for a double fitting. The cushions are covered with moquette and have hide trimming, the colour being green to match the general tone of the interior. A green pattern Rexine has been used for lining the panelling while the roofs are finished in a broken-white colour.

It will be noticed that the entrance is in front and the stairway to the upper deck is also there. Most of the passengers sit transversely, but there are longitudinal seats over the wheel arches. The gangway on the upper deck is on the off-side and sunk a few inches in order to assist in keeping the overall height down. In the lower saloon the gangway is in the centre. Ventilation is secured through the Beclawat half-drop windows on each side of both compartments, and there are two at the front of the top deck. There are also two Colt ventilators made by G. D. Peters

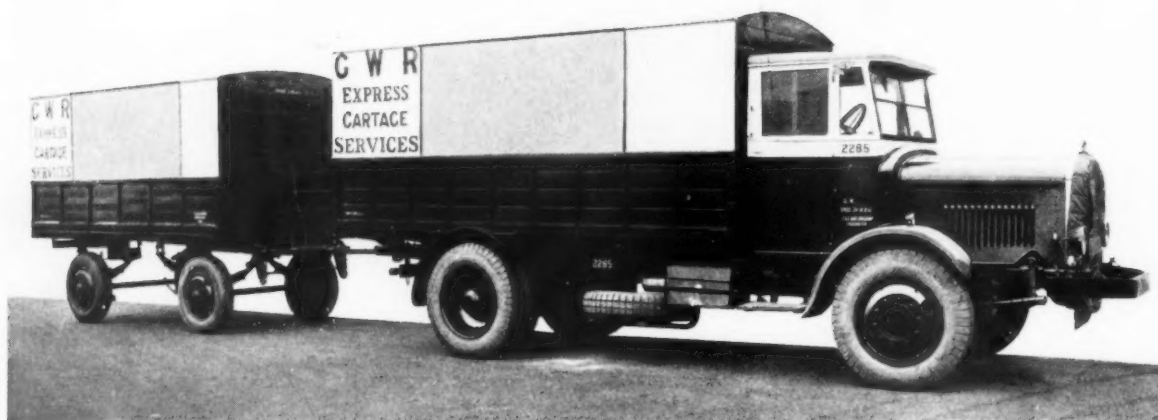
& Co. Ltd., in the roof. The effective use of this type of ventilator on the G.W.R. diesel railcar was described in our issue of March 2 last. The usual emergency exits from both compartments are at the back of the vehicle and direction indicators are at the front, side and back.

Except for the modifications necessary to secure the low overall height of 13 ft. 1½ in., the construction of the bodywork follows usual M-C-W lines, and the changes consist mainly in the use of specially shaped bearers to keep the gangways on both decks as low as possible. There is also a specially arranged pressed steel cross-member in front,

with trunnion and rubber block mountings, to absorb any torsional movement of the chassis.

These new vehicles, which are finished in the familiar Country Services green livery of the London Passenger Transport Board, are mounted on A.E.C. Regent chassis with oil engines. Metropolitan-Cammell-Weymann Motor Bodies, Ltd., is also building two double deck metal bodies for the L.P.T.B. on similar lines, to be mounted on A.E.C. petrol-engined Q-type chassis, but these are to seat 56 passengers and will have central vacuum-operated double sliding doors by G. D. Peters & Co. Ltd.

Thornycrofts for G.W.R.



One of the first Thornycroft oil-engined vehicles for the G.W.R.—a Taurus 6½-ton van, with 82-h.p. 4-cylinder compression-ignition engine, and trailer to carry an additional 4½ tons pay load. Note the forward arrangement of bumper bar which enables the large body to come within legal requirements



A view in the Paddington goods depot with two Thornycroft Handy 2-tonners at the loading bank. One G.W.R. order called for 84 of these vehicles, which have a 50-h.p. side valve petrol engine, a full floating rear axle, power-assisted brakes and 6.50-20 in. low-pressure tyres

Up-to-Date Road Vehicle Painting

The L.N.E.R. road motor depot at Holloway uses the V5 system of painting for rapidity and economy

BY the courtesy of Mr. H. N. Gresley, Chief Mechanical Engineer of the London & North Eastern Railway Company, we had recently an opportunity of visiting the London & North Eastern Railway road vehicles depot at Holloway and of seeing the painting methods used there for the past two years or so. Of the 1,700 road motor vehicles owned by the railway company, 600 are based upon this depot. Painting at Holloway is therefore an important matter and the rapid return of vehicles to service is essential. At the present time the V5 or Vigorised Spray process patented by Pinchin, Johnson & Co. Ltd., by which five coats can, if desired, be applied wet over wet in a day, is being used. The process has given satisfactory results.

The System Used

The secret of the Vigorised Spray process, or rather, of the special paints and varnishes used in it—which may, however, also be applied with a brush—is the pre-treatment of the oil and the fact that successive coats are made up with the same medium, providing an absolute bond between, and a uniform degree of elasticity in them. Each coat in consequence, though colour-fast, has a surface that keys rigidly to the succeeding coat, and a 30- to 60-minute interval only is required between coats. Such a rapid hardening process is due to a physical change in the film, no further drying by oxidation being required, thus enabling all the films to dry together and producing a tough, elastic and durable finish. All the material used is non-poisonous, contains no lead and satisfactorily complies with factory inspection conditions.

The advantages of such rapid application are many. Coats can be applied at hourly intervals and the lorry or van can be returned to service within three days, the

vehicle's non-earning time being thus reduced to a minimum and floor space also is saved.

The accompanying diagrammatic sketch (Fig. 1) shows the layout of the plant required. An air-compressor, driven off the main shafting in the machine shop adjacent to the painting bay, supplies air to a reservoir or drum in the latter. From this there are two mains, one to the tyre section, requiring a pressure of 125 lb. per sq. in.—at which the safety valve of the reservoir lifts—and the

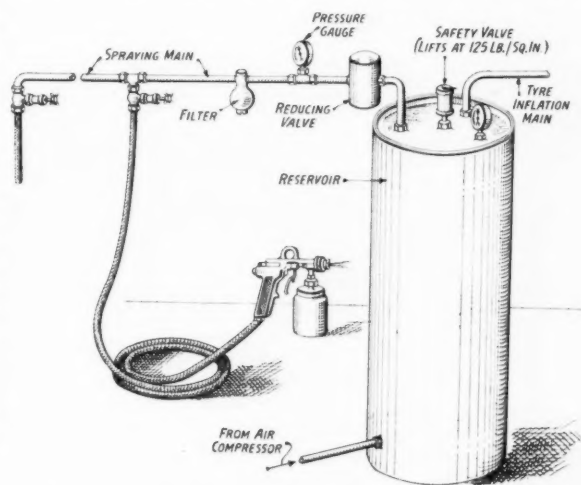


Fig. 1—Diagram of the layout of a simple plant for painting vehicles



Fig. 2—Applying the first undercoat of grey in the V5 process by the B.E.N. spraying gun



Fig. 3—A lorry 22 hours after painting, with the finish quite hard and glossy and able to stand the strenuous life of a goods vehicle

other leading through a reducing valve and filter to the spraying service main. Pressure is reduced to 75 lb. per sq. in. by this valve, and the spray gun used is of the B.E.N. type.

Details of the Process

Each vehicle, after being cleaned down, receives an undercoat of grey, the coat that is being sprayed on in Fig. 2. This is followed by a coat of blue and then a coat of blue with varnish is applied, lettering and figures being put on to this with transfers while it is tacky. Finally, two coats of varnish are used, again wet on wet. This is all done by the one man with the spray. Meanwhile the interior is being painted by hand with the same material, though in stone colour, by a boy so economising time.

Normally, all the paint and varnish is applied on one day, and is dry enough by the second morning to permit of small jobs being done on the body, engine testing, &c.

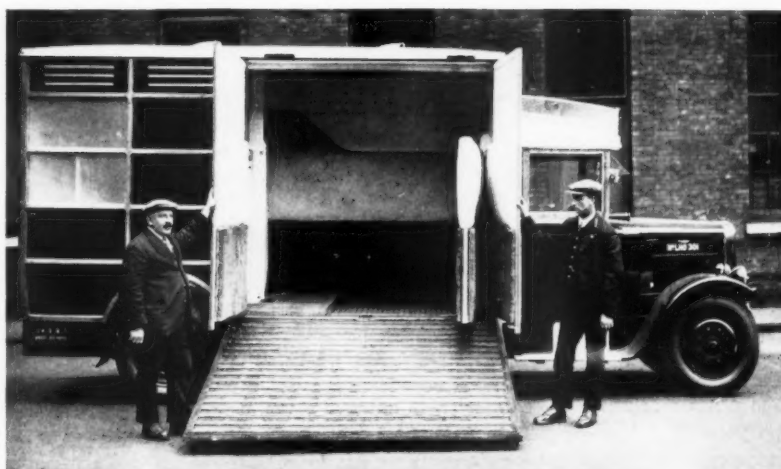
The vehicle goes out into traffic on the third day. If convenient it could even go out on duty during the second day.

Vehicles which do not get damaged or badly scratched stay out at work for two years between paintings. Certainly, the paint on one selected at random in the yard, which had been out at work and in the open night and day for exactly a year, appeared to be almost as good as new. The painting of the vehicle in Fig. 3 had been completed about 22 hours when we saw it and the paint was then absolutely hard. There is not the super finish of the passenger coach paintwork—obtainable with these and other materials by brush application and rubbing down between coats—as this is neither desirable nor possible over the unfilled woodwork used for the commercial road vehicles, but, as anyone may see on the streets of London, these L.N.E.R. vans and lorries look smart and well-cared-for and the paintwork is in good order, hard and glossy.

New L.N.E.R. Road Motor Horse Boxes

IN the accompanying illustrations are shown a couple of two-stall motor horse boxes which have recently been placed into service by the London & North Eastern Railway at Newmarket station. They embody all the latest improvements for vehicles of this sort with a view to affording the utmost comfort to the horses and attendants, and they will be mainly used for transporting horses between the railway station and the racecourse at Newmarket. They will also be available for direct road transport to any address.

The general lines of these vehicles are similar to those in service in the north-eastern area of the L.N.E.R. which were described and illustrated in THE RAILWAY GAZETTE of Septem-



ber 25, 1931, except that these latest ones are mounted on Leyland Cub chassis, an admirable choice for the purpose, providing ample power and easy riding when fully loaded. The bodies have been made by Strachans, of Acton, and the chief modification to the original design is in the provision of a little more headroom. There are two stalls, access to which is by means of a balanced ramp and two hinged doors fitted on the off-side of the vehicle, the doors forming sides to the ramp which facilitates the loading of the horses. The centre bale is hinged at the front, and can be removed to convert the vehicle into a loose box. The sides, bales, chest-boards and the roof over the horses' heads are covered with washable canvas, well padded with coconut matting where necessary. The grooms' compartment at the rear is provided with four seats, and mangers, harness racks and lockers are fitted.

CONSTRUCTING "CASTLE" CLASS EXPRESS ENGINES, G.W.R.

A new development in the application of machine grinding in facing operations for locomotive construction at Swindon works

THE new series of ten "Castle" class express locomotives now building at Swindon will bear the following names and numbers:—

No. 5023 Brecon Castle.	No. 5028 Llantilio Castle.
5024 Carew Castle.	5029 Nunney Castle.
5025 Chirk Castle.	5030 Shirburn Castle.
5026 Criccieth Castle.	5031 Totnes Castle.
5027 Farleigh Castle.	5032 Usk Castle.

The photograph reproduced herewith shows a portion of the erecting shop at Swindon with some of the engines in various stages of construction. The new engines, with the exception of one or two small detail modifications, resemble their predecessors of the same class.

An interesting machine utilised in the building of these and other locomotives at Swindon is a new horn cheek grinding machine, which is shown in operation on one of the frames of one of the new "Castle" class engines in the other illustration. This machine, manufactured and supplied by Henry Broadbent Limited of Sowerby Bridge, is specially designed for grinding the faces of locomotive hornblocks with the keep plates in position. When grind-

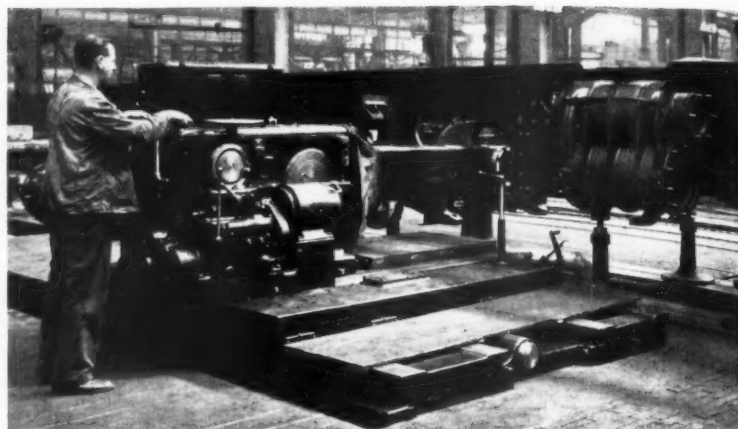
ing, the arm has an automatic up and down motion, and at the same time the wheel traverses across the face, controlled by a hand lever. The bed consists of two box section beds tied together by cross pieces, and provides a narrow guide in the centre for the saddle. The saddle has long bearings on the bed and quick power traverse in either direction, driven from a motor mounted at the back and operated by a stop, start and reverse push-button box on the front of the headstock. Fine adjustment for putting on the cut is by a large handwheel, and to enable precise readings to be taken a large micrometer dial is fitted on the handwheel shaft. There is another adjustable dial for setting to a line. Mounted on the saddle is the headstock carrying the grinding arm, which has power traverse in either direction, driven by a separate motor through a hand-operated double friction clutch. No manual adjustment is provided for this motion, as the headstock can be inched along by power.

The drive for the up and down swivelling motion is obtainable from the same motor. It is driven through two worms and segments, the automatic reverse being



General view of a portion of the erecting shop at Swindon works, G.W.R., with some of the new "Castles" in various stages of erection

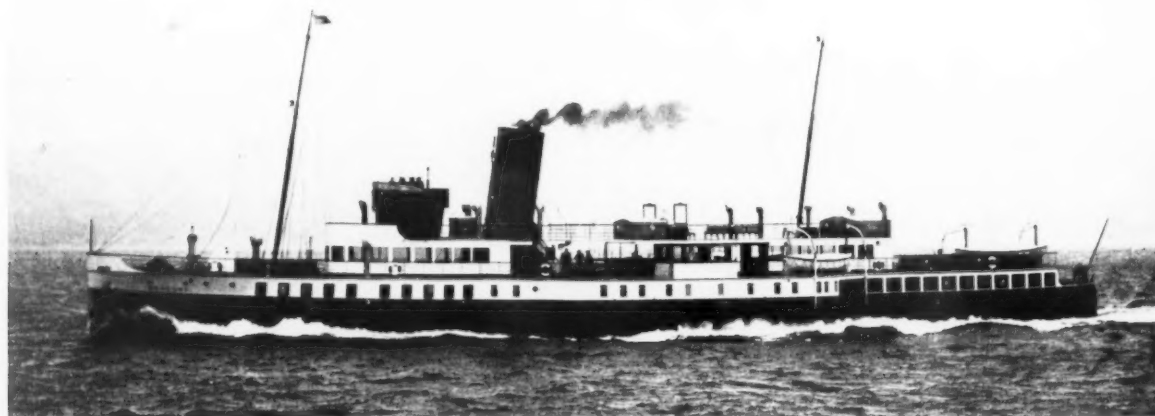
operated by a disc fitted with dogs operating a quick throw over clutch, the dogs on the disc being adjustable for different lengths of stroke. In addition to power, hand adjustment is provided. The grinding spindle runs in precision ball and roller bearings and carries on each end steel holders for segmental blocks. It is driven by three texropes from a separate motor mounted on an adjustable base, secured on the extreme end of the arm. The control equipment, actuated by push buttons, for both the feed and grinding motors, is housed in the headstock. The arm is of strong rectangular section, ribbed at intervals, and has large diameter bearings in the grinding head. To take the side pressure, arms fitted with taper gibs, adjustable for wear extend at either side of the head.



Horn cheek grinding machine, Swindon works

THE NEW CLYDE PADDLE STEAMERS "MERCURY" AND "CALEDONIA"

(See article on page 853)



Sheltered observation saloon on deck



A spacious dining saloon

RAILWAY NEWS SECTION

PERSONAL

Lord Ashfield is reported to be progressing satisfactorily towards recovery from his recent eye operation.

Mr. Walter Kennedy Whigham, who, as announced in *THE RAILWAY GAZETTE* of May 4, has been elected Chairman of the Central Argentine Railway, is also a Director and Chairman of the Finance Committee of the London and North Eastern Railway Company.

Co. Ltd., the Second British Steamship Trust Limited, the Second Mercantile Trust Limited, the Sun Insurance Office Limited, the Sun Life Assurance Society and Robert Fleming & Co. Ltd.

SOUTHERN RAILWAY STAFF CHANGES

The following appointments have been made by the Directors of the Southern Railway, with effect as from May 1.—

Mr. P. Nunn, Assistant Divisional Superintendent, London West Division,

Mr. W. Howard-Williams, C.B.E., who as announced in *THE RAILWAY GAZETTE* of May 4, has been elected Deputy-Chairman of the Central Argentine Railway Company, commenced his railway career as a cadet on the London & North Western Railway in 1897. He served his training in the Traffic and Goods Departments, and after varied experience in several districts of the line, he was appointed in 1906 Assistant District Goods Manager, South Staffordshire. Four years later he was appointed to a



Mr. Walter K. Whigham,
Elected Chairman, Central Argentine
Railway



Mr. W. Howard-Williams, C.B.E.,
Elected Deputy Chairman, Central Argentine
Railway

From August, 1914, until January, 1919, he was on war service, first with the North Staffordshire Regiment and afterwards on the staff of the 51st (Highland) Division until March, 1918, when he joined the headquarters of the 4th Army Corps. He was mentioned in despatches three times. Mr. Whigham, who is a member of the Central Electricity Board, is also a Director of the Bank of England, the British Investment Trust Limited, the British Steamship Investment Trust Limited, the London and Lochside Investment Trust Limited, the Mercantile Investment and General Trust

to be Divisional Superintendent, Western Division, in place of Mr. D. S. McBright, who is retiring.

Mr. C. S. Cobley, Assistant Divisional Superintendent, Western Division, to be Assistant Divisional Superintendent, London West Division.

Mr. A. C. Payne, Traffic Manager's Office, to be Assistant to Divisional Superintendent, Western Division.

Mr. J. T. Batey, Managing Director, R. & W. Hawthorn, Leslie & Co. Ltd., has been elected President of the North East Coast Institution of Engineers and Shipbuilders for 1934-35.

similar position in the Liverpool District. In 1912 he was transferred to Euston as head of the Conciliation Department, and later on became Mineral Traffic Manager. During the war Mr. Howard-Williams acted as Deputy and afterwards Director of Inland Transport of the Ministry of Munitions, being transferred in 1918 to the Board of Trade in order to assist the Coal Controller during the coal crisis, and in the same year he was appointed Assistant General Manager of the London & North Western Railway. He also attended the International Labour Conference at Washington in

an advisory capacity to the Employers' Delegate. It was in 1920 that Mr. Howard-Williams went to South America as General Manager of the Central Argentine Railway from which position he retired in 1926, and he then joined the Central Argentine Board in London as a Director. He is also a Director of the Argentine Transandine Railway, and the United Railways of the Havana and their subsidiaries.

Mr. T. Beach Smith, M.Inst.T., whose forthcoming retirement from the

In 1909 he was appointed District Traffic Superintendent at Gwelo, and subsequently served in this capacity at Beira and Bulawayo also. Mr. Beach Smith was promoted to be Traffic Manager in 1917, and, when the Traffic and Locomotive Running Departments were amalgamated in 1927, he was appointed Chief Superintendent of Transportation and carried out the reorganisation of the working of the line on the new basis. He subsequently inaugurated and supervised the running of the extensive road motor

ment Railways at an early age. After passing the Cape Civil Service examination in 1899, he was posted to the General Manager's office, Cape Town, where he was intimately associated with the many rates problems then existing as between the four territories which were subsequently to form the Union. In 1908 he was appointed Secretary of the Cape Harbours Commission, and, upon the formation of the Union in 1910, was transferred to the Assistant General Manager's office, Bloemfontein. From 1913 onwards, Mr. Dawson was



Mr. T. Beach Smith, M.Inst.T.,

Chief Superintendent, Transportation, Rhodesia Railways, 1927-34



Mr. W. B. Dawson, M.Inst.T.,

Appointed Chief Superintendent, Transportation, Rhodesia Railways



Mr. E. F. Cornilliac, M.I.Struct.E.,

Appointed Maintenance Engineer, Trinidad Government Railways

position of Chief Superintendent, Transportation, Rhodesia Railways, was announced in THE RAILWAY GAZETTE of December 22 last, proceeded on leave on Wednesday (May 9), preparatory to retirement upon pension, at his own request, in August next. He entered the office of the Superintendent of the Line, Midland Railway (England) in 1893, resigning in 1901 to take up an appointment with the Rhodesia Railways at Umtali, in Southern Rhodesia.

services of the Rhodesia Railways. Mr. Beach Smith's retirement marks the termination of 33 years' service, the longest attained by any employee of this company.

Mr. W. B. Dawson, M.Inst.T., who, as foreshadowed in THE RAILWAY GAZETTE of December 22 last, succeeded Mr. Beach Smith as Chief Superintendent of Transportation, Rhodesia Railways, on May 1, joined the late Cape Govern-

ment Railways at an early age. After passing the Cape Civil Service examination in 1899, he was posted to the General Manager's office, Johannesburg, but in 1918 he became Trains Clerk at Durban, and in 1925 was promoted Chief Clerk. In the following year he was appointed Superintendent, Operating, Durban, and when a Tourist and Travel Department was formed in 1927, he became Manager of it. On completion of the organisation of this innovation, he was selected to reorganise the Central Operating Control at headquarters, Johannesburg, with the title of Superintendent, Rolling Stock Control. This position he held until his recent acceptance of the offer of appointment as Chief Superintendent, Transportation, Rhodesia Railways.

Mr. Frank Tatlow, C.B.E., formerly General Manager of the old Midland Railway, left estate valued at £51,793 (£47,815 net).

Mr. E. F. Cornilliac, M.I.Struct.E., who, as announced in THE RAILWAY GAZETTE of March 16 last, has been appointed Maintenance Engineer, Trinidad Government Railways, joined those railways as draughtsman in the Engineering Branch in 1904. In 1920 he was appointed 1st Assistant Main-



Group at top table, left to right: Rt. Hon. Sir Robert Horne, G.B.E., K.C., M.P.; Sir Josiah C. Stamp, G.B.E., D.Sc.; Rt. Hon. Viscount Knutsford; Hon. Oliver F. G. Stanley, M.C., M.P. (President); Rt. Hon. Lord Macmillan, P.C.; Lady Macmillan; Mr. W. V. Wood; Mrs. W. V. Wood; Sir Herbert Walker, K.C.B.

Photo.]

At the Railway Benevolent Institution Dinner

[Swaine

tenance Engineer, and from April to October, 1923, and again from May to October, 1924, acted as Chief Engineer. He was promoted to be 1st District Engineer in 1925, twice more acting as Chief, from July, 1925, to January, 1926, and from May, 1932, until December, 1933, following upon which he was appointed Maintenance Engineer early this year.

It is with regret that we learn of the death on April 26 of Mr. R. A. Gordon, late Cashier, Scottish Area, L.N.E.R.

We regret to note the death on April 28 of Mr. H. R. M. McMillan, V.D., M.Inst.C.E., late Senior Engineer B.B. & C.I. Railway, India, at the age of 48.

At the annual meeting of the Institution of Civil Engineers, held on May 8, Sir Richard Redmayne was elected President of the Institution for the year 1934-35 and assumes office in November next.

Mr. George P. Newell, Secretary, Local Committee, Central Argentine Railway, retired at the end of March last from that position, which he had occupied for the unusually lengthy period of 37 years.

In the course of his speech from the chair of the Crewe Locomotive Dinner—reported on page 854—Captain H. P. M. Beames announced that he would be retiring from the position of Deputy Chief Mechanical Engineer, L.M.S.R., in September next.

From the LONDON GAZETTE.—Engineer and Railway Staff Corps—Lt.-Col. Sir Henry Fowler, K.B.E., M.Inst.C.E., M.I.Mech.E., to be Colonel (April 7). Col. Fowler was Chief Mechanical Engineer, and Assistant to the Vice-President for Research, L.M.S.R.

At the annual general meeting of the Railway Students' Association of the London School of Economics and Political Science, Sir William H. Beveridge, K.C.B., Director of the London School of Economics, was elected President for the year 1934-35. The Vice-President and officers remain as before, except that Mr. R. J. Eaton, Passenger Manager's Office, Liverpool Street station, L.N.E.R., was elected Assistant Secretary.

The Secretary of State for the Colonies has recently made the following appointments:—

Mr. H. A. Tyler-Smith, Assistant Director of Public Works, Nigeria, to be Director of Works and Transport, Trinidad.

Mr. H. R. Guenin, late Assistant Engineer, Federated Malay States Railways, to be Maintenance Engineer, Transport and Harbours Department, British Guiana.

L.M.S.R. STAFF CHANGES

The following appointments have been approved by the Directors:—

Chief Commercial Manager's Department

Mr. E. M. Philip, Head of Divisional Rates Office, Euston, to be Head of Centralised Rates Office, Euston.

Mr. H. A. Vine, Chief Clerk, Divisional Rates Office, Euston, to be Assistant Head of Centralised Rates Office, Euston.

Mr. T. E. Fitton, Parcels Agent, Manchester (Victoria), to be Joint Parcels Agent, Manchester (Victoria), for L.M.S., L.N.E. and G.W. Railways.

Chief Commercial and Chief Operating Managers' Departments

Mr. A. E. Walker, Goods Agent, Gloucester, to be Joint Goods Agent, Gloucester, for L.M.S. and G.W. Railways.

Mr. W. O. Roberts, Goods Agent, Macclesfield, to be Joint Goods Agent, Macclesfield, for L.M.S. and L.N.E. Railways.

Mr. T. W. Steadman, Goods Agent, Keighley, to be Joint Goods Agent, Keighley, for L.M.S. and L.N.E. Railways.

Chief Operating Manager's Department

Mr. S. H. Fisher, Operating Superintendent, Euston, to be Assistant Chief Operating Manager, Euston.

Mr. F. A. Pope, General Executive Assistant, Euston, to be General Assistant, Euston.

Mr. E. Falconer, Assistant (Outdoor), Euston, to be Goods Terminal Superintendent, Euston.

Mr. W. A. Sargent, Assistant (Train Diagrams, &c.), Derby, to be Assistant, Euston.

Chief Civil Engineer's Department

Mr. C. R. Irving, Assistant to District Engineer, Bangor, to be District Engineer, Abergavenny.

Mr. C. J. Chaplin, Draughtsman, Walsall, to be Assistant to District Engineer, Bangor.

Signal and Telegraph Engineer's Department

Mr. H. C. Dickinson, Chief Inspector, Bedford, to be District Signal and Telegraph Assistant, Bedford.

Mr. J. H. Mottram, District Signal and Telegraph Assistant, Rugby, to be District Signal and Telegraph Assistant, Birmingham.

Mr. J. Harding, District Signal and Telegraph Assistant, Abergavenny, to be District Signal and Telegraph Assistant, Rugby.

Mr. F. W. Whittingham, Chief Inspector, Nottingham, to be District Signal and Telegraph Assistant, Abergavenny.

Chief Marine Superintendent's Department

Mr. E. D. Farr, Dredging Superintendent, Garston Docks, to be Dredging Master to cover all ports

where dredging operations are carried out.

Chief Mechanical Engineer's Department

Mr. J. R. Halliday, Assistant to Chief of Central Materials Inspection Bureau, Derby, to be Assistant i/c of Materials Inspection, Sheffield.

Mr. W. F. Marlow, Inspector of Material, Manchester, to be Assistant i/c of Materials Inspection, Darlington.

Mr. R. Carpmal, Chief Engineer, G.W.R., has been elected a Member of the Council of the Institution of Civil Engineers.

INDIAN RAILWAY STAFF CHANGES

Sir Hugh Hannay, Kt., Agent, East Indian Railway, has been granted leave for 20½ months preparatory to retirement, as from April 29.

Mr. D. M. S. Robertson, Divisional Superintendent, East Indian Railway, has been appointed to officiate as Chief Commercial Manager on that railway as from March 19.

Questions in Parliament

Railway and Road Transport in Tanganyika

Mr. Hutchison on April 25 asked the Secretary of State for the Colonies whether he was aware that the Tanganyika Government proposed to prohibit the carriage of goods by motor transport over any section of any road in the territory which ran parallel with any section of the railway; whether this was a policy which was being adopted generally in the British Colonies; and what is its justification.

Sir P. Cunliffe-Lister.—The Tanganyika Government has been advised that the existing legislation in that territory has not eliminated uneconomic motor competition with the railway, and the question of amending the existing legislation is under consideration. It is the policy to effect a co-ordination between road and rail transport.

Prepayment on Fish Traffic

Mr. Loftus asked the Minister of Transport if he would now make representations to the railway companies to abolish the prepayment of carriage on fish, which was imposed by arrangement as a war-time measure only.

Mr. Stanley.—The standard terms and conditions on which merchandise is carried on the railways, which were settled by the Railway Rates Tribunal under the provisions of the Railways Act, 1921, provide that in respect of the carriage of perishable merchandise by passenger train or similar service the company's charges for carriage shall be payable in advance. I have no jurisdiction in the matter, but it is open to any representative body of traders concerned to apply to the tribunal for an amendment of these conditions.

The Railway Benevolent Institution Annual Dinner

The Hon. Oliver F. G. Stanley, M.C., M.P., Minister of Transport and President of the Railway Benevolent Institution, presided at the seventy-sixth anniversary dinner, which was held on Thursday, May 3, at the Connaught Rooms. For the second year ladies were present, and the speeches, which were curtailed in number, were followed by dancing.

The list of donations and subscriptions amounted to £14,136, the total of the present list being £1,544. Other lists were:

Collected and contributed by the chief officers and staff of the following companies:—	
London Midland & Scottish Railway (including £2,899, being collections made and part proceeds from sale of souvenir badges, during exhibition of Royal Scot train in this country)—	£
Sir Josiah C. Stamp, G.B.E., D.Sc.	5,894
London & North Eastern Railway—	
Sir Ralph L. Wedgwood, C.B., C.M.G.	2,098
Great Western Railway—	
Sir James Milne, C.S.I.	1,735
Great Southern Railways—	
Mr. P. J. Floyd	1,443
Southern Railway—	
Sir Herbert A. Walker, K.C.B.	670
London Passenger Transport Board—	
Mr. E. Rawdon Smith	244
Cheshire Lines Committee—	
Mr. G. Leedam	177
Westinghouse Brake & Saxby Signal Co. Ltd.—	
Mr. J. Griffith Hall	133
Midland & Great Northern Railways Joint Committee—	
Mr. R. B. Walker	106
Great Northern Railway (Ireland)—	
Mr. J. B. Stephens	36
Railway Signal Co. Ltd.—	
Mr. W. S. Roberts	28
Other collections	28

Among those present were:—

Mr. G. H. Loftus Allen, Mr. J. Armstrong, Mr. A. W. Arthurton, Mr. W. H. Austen, Mr. F. Stanton Barnes, Mr. T. Barty, Capt. Guy V. Baxendale, Mr. A. T. Bennett, Col. F. I. Bentley, T.D., Mr. A. P. Bevan, Commander W. T. Bird, Mr. W. Bishop, Mr. A. Blizard, Mr. H. J. Bourn, Mr. Leslie Boyce, M.P., Mr. A. J. Boyd, Mr. John Boyd, Mr. J. Bromley, Mr. Desmond Brooke-Hitching, Lt.-Col. P. M. Brooke-Hitching, Sir James C. Calder, C.B.E., Mr. Raymond Carpmal, Mr. Charles Carslake, Mr. C. H. Carter, Mr. F. L. Castle, Mr. A. L. Castleman, Mr. R. F. C. Castleman, Mr. J. Cave, Mr. W. H. C. Clay, O.B.E., Mr. Chas. Cooper, Sir George L. Courthorpe, Bt. M.P., Mr. C. H. Cowton, Mr. E. C. Cox, C.B.E., M.V.O., Mr. James Dallmeyer, Mr. R. G. Davidson, Mr. Ashton Davies, O.B.E., Mr. R. Hart Davies, Mr. G. Cole Deacon, Mr. C. E. Dee, Mr. W. J. Devenish, Mr. V. H. Drewry, Mr. A. Durrant, Mr. Alexander Eddy, Mr. J. M. Eddy, C.B.E., Mr. C. W. Edwards, Mr. K. R. Ellson, Col. S. Flowers, O.B.E., M.C., T.D., Mr. E. Ford, O.B.E., Major G. Newton Ford, O.B.E., Mr. John Ford, Lt.-Col. C. J. Francis, C.B.E., R.E., Commander H. V. Gaud, Mr. J. F. Gee, Mr. W. C. Gerrie, Mr. R. S. Griffiths, Mr. R. H. Hacker, Mr. F. B. Halliwell, Mr. J. A. Hart, Mr. W. E. Hart, Mr. F. J. Hills, Mr. C. W. C. Hine, Sir Robert Horne, P.C., G.B.E., K.C., M.P., Mr. A. Howie, Mr. T. W. Jacobs, Mr. W. A. Jepson, Mr. E. Leslie Jones, Mr. J. A. Kay, Mr. J. King, Mr. A. E. Kirkus, O.B.E., Mr. Lionel Kitson, Mr. G. H. Knights, Viscount Knutsford, Mr. D. R. Lamb, Mr. A. P. Lambert, Lt.-Col. E. Ff. W. Lascelles, C.B.E., Mr. L. J. LeClair, Lt.-Col. F. A. Cortez Leigh, Mr. R. J. R. Loxdale,

Mr. Harold Mack, Lord Macmillan, P.C., Mr. W. J. Manclark, Mr. J. Marchbank, Mr. E. F. Marsh, Mr. R. E. L. Maunsell, C.B.E., Brig.-Gen. Sir Arthur Maxwell, K.C.B., C.M.G., D.S.O., Mr. A. L. McColl, Mr. C. F. Minett, Mr. J. C. Mitchell, Mr. Walter Monckton, K.C., Major C. H. Montgomery, Major R. F. Morkill, Mr. G. Morton, Mr. G. Mottshaw, Lt.-Col. A. H. L. Mount, C.B., C.B.E., R.E.

Mr. L. H. K. Neil, Mr. C. H. Newton, Mr. A. W. Norman,

Mr. F. J. Orchin.

Mr. E. E. Painter, Mr. S. A. Parnwell, Mr. R. T. Pemberton, Mr. W. F. Pettigrew, Mr. John Pike, O.B.E., Mr. P. W. Pine, Mr. A. G. Pollard, Mr. K. H. Preston, Mr. P. H. Price, O.B.E., Mr. A. L. C. Purp,

Mr. John Quirey, C.B.E.

Mr. James Ramsay, O.B.E., Mr. C. W. Reeve, Mr. R. A. Riddles, Mr. R. A. Roberts, C.B.E., Mr. W. S. Roberts, Mr. W. Robinson, Mr. T. W. Royle, O.B.E., Lt.-Col. Harold Rudgard.

Mr. J. B. Scattergood, Mr. C. Sheath, Mr. C. Smith, Mr. G. W. Smith, Mr. T. R. Smith, Mr. W. G. Smith, Sir Josiah C. Stamp, G.B.E., D.Sc., Mr. J. B. Stephens, Mr. W. J. Stevens, Sir Edwin F. Stockton, Sir Charles Stuart-Williams, Mr. S. J. Symes, O.B.E., Mr. Gilbert S. Szlumper, C.B.E.

Mr. J. Talbot, Mr. N. Taylor, Mr. E. Tenneson, Mr. C. H. Thompson, Mr. H. Thompson, Mr. H. L. Thornhill, Mr. W. S. Tredgold, Sir George Wyatt Truscott, Bt., Mr. E. M. Turnbull, Mr. T. Henry Turner.

Mr. G. C. Usher.

Mr. A. G. Walkden, Sir Herbert A. Walker, K.C.B., Mr. R. B. Walker, Mr. H. C. Walton, Major H. A. Watson, C.B.E., M.V.O., Mr. H. B. Webster, Mr. S. H. Whitelegg, Mr. W. E. O. Williams, Mr. Alex. Wilson, O.B.E., Mr. H. C. Wintle, Mr. W. V. Wood, Mr. A. Woods, Mr. R. C. Workman.

Mr. Alec Young, Mr. P. C. Young, C.B.E.

The Right Hon. Lord Macmillan, in proposing the toast "Success to the Railway Benevolent Institution," said his real object that evening was to commend to his listeners a really deserving railway charity—a charity which existed for the performance of a really fine work. He knew of the case of a little girl who was adopted by the Institution who eventually went into the teaching profession and was now the headmistress of a great grammar school. A little boy and girl, the orphans of railwaymen, were admitted to the Orphanage, which the Institution carried on at Derby, where they were maintained and educated. They were subsequently married, and only the other day the husband was elected Mayor of an important town. That was something which had been brought about entirely through the beneficence of this Institution. There was a story of a boy who had become a Government Inspector of Education in Nigeria, and of yet another who had obtained an important post at the L.M.S. works at Wolverton, with several thousand hands under him. He could also quote them other instances of equally noteworthy achievement. All who were interested in the great industry of transport were also interested in Mr. Oliver Stanley, because no one who had occupied his office had been more ready than he to listen to any problems

which were put before the Ministry, and no one had faced the difficulties confronting him with greater courage, better taste and more courtesy. He coupled with the toast the name of the President of the Institution.

The President, in replying, said he did not think the public quite appreciated what they owed to the railways of this country. But then we never quite appreciated anything to which we have grown accustomed—anything which we look upon as a matter of course and which was always ready for our service when we needed it. He perhaps did not himself appreciate what we owed to the railways until he was in a position where he had to bear some of the responsibility and do some of the work in connection with the terrible problem of accidents on the roads, and that rather brought home to him what courage, what judgment, what moderation and self-restraint there was amongst the thousands of men in the railway service which went to make up the extraordinary record of security which they found upon the railways. The fact that they could open their papers day after day without reading huge headlines with regard to a terrible railway accident was, he thought, splendid testimony to the men upon their railways, and he thought that none of them ought to forget it. It was good to gather from the backs of their programmes that the donations to the Institution were more than £1,000 in advance of those of last year.

The Right Hon. Viscount Knutsford proposed the toast of "The President," and in so doing recalled that he was once asked by his colleagues on the North Western Railway to approach Lord Derby with a view to his becoming chairman of that company, but he refused, and he (the speaker) did not know until recently why he had done so. His reason was this: being a far-seeing man he foresaw the ending of the railways and the coming of road transport, and therefore concluded that at some time or other there must be a Ministry of Transport, and if there was to be a Minister of Transport he had the very man for the job! It would never have done for Lord Derby to be chairman of a great railway and his son to have been the Minister of Transport! So what they lost on the swings they gained on the roundabouts, and now had a Minister of Transport who was clear of all rusty precedents, often the result of stupidity, and who was able to face facts and make decisions with the boldness of youth. It was of great importance to them that they should have a man like Mr. Stanley at the head of affairs, and he was sure that they all wished he might long hold office.

The toast having been briefly acknowledged by the President, the proceedings terminated.

New L.M.S. Paddle Steamers

Inaugural Cruise on the Firth of Clyde

On Tuesday last, May 8, the L.M.S.R. gave considerable pleasure to a number of guests by taking them for a cruise in the new paddle steamers *Mercury* and *Caledonia* around one of the most beautiful and most interesting holiday centres in Great Britain—the Firth of Clyde. The L.M.S.R. was represented by:—

Sir Hugh Rose, Director; Sir Harold Hartley, Vice President; Mr. Ashton Davies, Chief Commercial Manager; Captain J. W. Harris, Chief Marine Superintendent; Mr. J. Ballantyne, Chief Officer for Scotland; Mr. W. Crozier, Operating Manager, Scotland; Mr. W. Yeaman, Commercial Manager, Scotland; Mr. T. H. Moffat, Secretary, Scottish Local Committee; Mr. J. A. Milligan, London District Passenger Manager; Mr. G. H. Loftus Allen, Publicity Officer, and others.

Retired officers present included:—

Mr. Donald A. Matheson, formerly General Manager, Caledonian Railway, and subsequently Deputy General Manager for Scotland, L.M.S.R.; Mr. David Cooper, formerly General Manager, Glasgow & South Western Railway; and Mr. R. Killin, formerly General Superintendent (Northern Division), L.M.S.R.

The new vessels replace vessels of the same name which were withdrawn from service on December 18 last and sold for breaking-up. The *Caledonia* was built by Wm. Denny & Brothers Ltd., Dumbarton, for the Caledonian Steam Packet Co. Ltd., a subsidiary of the L.M.S.R., and will normally be employed on the regular and excursion services out of Gourock, Dunoon, Wemyss Bay, Rothesay, Largs, &c. Her sister ship, the *Mercury*, was built by the Fairfield Shipbuilding & Engineering Co. Ltd., for the L.M.S.R., and will maintain what is known as the Kyles of Bute service sailing from Greenock, Gourock, Dunoon, Rothesay and Kyles of Bute.

Each ship has an overall length of 229 ft., and a gross tonnage of about 620. The propelling machinery consists of three-crank triple-expansion diagonal surface-condensing engines, giving a speed of 17 knots. Further details of the vessels were included on page 226 of our issue of February 9 last.

Accommodation is provided for 1,331 passengers, and, as is to be expected, both these vessels, in general design, decoration, furnishing and general passenger comfort, are a very great advance on their predecessors. Typical illustrations of the interior of the vessels are reproduced on page 848. One noticeable feature is the sheltered observation saloon on the upper deck, from which, whatever the climatic conditions, the beauty of the Firth can be seen in comfort. There is little doubt that the enterprise of the L.M.S.R. in building these new vessels and in its close co-operation with the town councils of the various Clyde resorts will result in increased popularity of the Firth of Clyde as a holiday centre. During 1933 the L.M.S. steamers carried about 250,000 passengers

and it is not unreasonable to expect that this figure will be considerably improved during the coming year.

Mr. Ballantyne, in welcoming the guests, said that sailing the Firth of Clyde was a pleasure which never grew stale, and it had been the consistent policy of the L.M.S.R. to enhance the joys of going "doon the watter" by

improvement in facilities, by more frequent services and by cheapening the price. That policy had been pursued in spite of the fact that Glasgow and the West of Scotland has suffered from the economic crisis certainly as much, if not more, than any other part of the country, and in these circumstances it needed courage, as well as foresight, to go on building new and better ships in the face of falling traffics. They had turned the corner, however, and were now seeing better times ahead.

The Argentine Transport Problem

(FROM OUR OWN CORRESPONDENT)

The railway companies operating in the Argentine Republic have sent out what is practically an S.O.S., urging the Government to consider their position in regard to several factors, which are combining to make their financial situation serious in the extreme. A lengthy communication, embracing a complete statement of their difficulties and the danger ahead, was prepared by the legal representatives of all the foreign-owned railways, and submitted to the Government at the end of March, although its contents have only recently been made public, together with a decree appointing an official committee of enquiry into the case. The memorial states that the majority of the railways have been compelled to ask for moratoria on the debenture services; they were using up reserve funds and accumulating overdrafts; shares were down to prices which made further issues impossible, and finally, as occurred with the Transandine Railway, some of the companies might be obliged to suspend their services, unless urgent measures were adopted to avert that catastrophe. The memorial did not stop at the relation of the companies' woes; a number of measures were suggested by which their situation might be improved, amongst which were the following:—

Avoidance of ruinous competition by co-ordinating rail and road transport. In this connection, the Government was urged to use its influence to have the Transport Co-ordination Bill passed at the forthcoming sessions of Congress.

Authorisation for working agreements between the companies.

Special exchange rates for remittances abroad.

Limited application of reduced rates for official transport.

Reduction in surplus staffs.

Prompt payment of Government accounts.

Immediate collection of amounts due in respect of parcels post.

Postponement of exigencies in regard to erection of barriers at level crossings, and other works.

The decree, which is signed by the President, and his Minister of Public Works, is short and to the point. The following is a translation:—

Art. 1.—Under the chairmanship of the Minister of Public Works, an Honorary Board is hereby created to study the conditions under which the transport industry is operating and the economic situation of the railway concerns, and suggest, in accordance with the conclusions arrived at, the administrative and

legal measures which are deemed to be most in agreement with the general interests of the country.

Art. 2.—The following members are hereby appointed to act on the board referred to: The General Manager of the State Railways, Sr. Pablo Nogues; the Chairman of the Local Board of the Buenos Ayres & Pacific Railway, Dr. Angel Gallardo; the Chairman of the Argentine Industrial Union, Sr. Luis Colombo; Member of the Stock Exchange, Sr. Juan B. Mignauy; and Member of the Argentine Rural Society, Dr. Adolfo Bioy.

It will be welcome news to all interested in the future of the Argentine railways to read that their financial position is to be the subject of official investigation, if only that the whole truth in regard thereto may be known. Public opinion in Argentina has been so misled, owing to the circulation of false news, regarding the profits of the railways, that it is practically impossible to convince the man in the street that they are not concealing a considerable part of their revenue, and in reality manipulating a very profitable business. Many people are of the opinion that in times of plenty there have been exaggerated concessions to the labour unions, and that in the companies' acquiescence in requests from those in high places, not to foment labour troubles by dismissing surplus staff, and suchlike measures, economical working has been subordinated to diplomacy, but on the whole the troubles of the railway are not of their own making, and they have the sympathy and support of all those who know the real truth of the situation in which they find themselves to-day.

THE AUSTRIAN NATIONAL EXHIBITION.

—The Austrian National Exhibition, which was opened at Dorland Hall, Piccadilly Circus, on April 16, and was due to close to-morrow (May 12), will remain open up to and including May 21. Industry, Art, Travel and Sport are well represented. The Travel Section, with its wonderful photographs of Austrian beauty spots, its attractive posters and mural paintings of sports, has been well patronised by would-be tourists, who have abundant information placed at their disposal. In the industrial section there was an effective display of modern glass, wood and metal work.

Crewe Dinner

The Past and Present Crewe Pupils' and Premiums' dinner, held on Friday, May 4, under the chairmanship of Captain H. P. M. Beames, Deputy Chief Mechanical Engineer, L.M.S.R., at the Trocadero Restaurant, W.1, the forty-fourth of the series, was one of the most popular and representative gatherings in the railway engineering world. There was a large attendance, and those present included:—

Col. A. N. Floyer Acland, Messrs. W. Anderson, J. Arden-White, R. D. Ball, F. N. Bayley, G. H. P. Beames, P. H. B. Beames, Captain H. P. M. Beames, Messrs. J. W. Beaumont, G. S. Bellamy, F. S. Bennett, C. C. Berger, D. H. Binyon, F. J. Birks, R. C. Bond, A. J. Boyd, R. Brookelbank, Warwick Brookes, O. Bulleid, Norman Carroll, A. J. Verney Cave, F. L. Clarke, R. Fell Clark, F. C. Coleman, Col. J. R. Collins, Messrs. W. S. Cooke, V. R. Bowen Cooke, J. B. Corrie, F. C. A. Coventry, Alexander Craig, Robert B. Creak, R. D. K. Curling, G. R. S. Darroch, P. A. H. Deligny, J. E. V. Denning, Arthur Devon, R. F. W. Eardley, Reginald Earle, Capt. Ian Elliott, Messrs. Cecil Evers, R. E. Fordham, Lt.-Col. C. J. H. W. Francis, Messrs. W. S. Fraser, George B. Furness, V. P. Gamon, Commander H. V. Gaud, Messrs. Andrew S. Gillett, F. G. Goddard, Sir Patrick Gower, Messrs. Edward Greg, S. T. Gresham, H. N. Gresley, H. J. Hale, Sir Martin Hall, Mr. W. Handy, Major H. A. Harrison, Col. Charles Hitchens, Messrs. T. Hornbuckle, Reginald Horton, George Hughes, G. S. Hussey, Clement James, S. J. Kendrick, J. A. W. Knapman, L. F. Korb, Prof. F. C. Lea, Messrs. Measham Lea, W. B. Leach, F. A. Lemon, G. A. Lemon, Frank Lochner, Col. B. C. Lockhart-Jervis, Messrs. Ernest Long, R. H. Mace, Charles L. Mason, R. E. L. Maunsell, W. E. K. Mayne, B. C. McPherson, G. F. Michel, G. E. C. Mossley, Lt.-Col. A. H. L. Mount, Messrs. Gordon Murray-Smith, Herbert Neal, D. Newkirk, Col. S. E. Parkhouse, Sir Byron Peters, Messrs. W. B. Pickering, F. D. Playford, T. N. Price, R. A. Riddles, D. G. Ritson, Capt. E. A. Robinson, Messrs. B. T. Rumble, H. D. Sawtell, Harry J. Schwartz, J. Shearman, Col. C. K. D. Sidgwick, Messrs. Alan Sinclair, Alex Spencer, R. O. Squarey, J. C. Stahl, W. A. Stanier, A. B. Street, T. C. Swallow, L. W. Swainson, Major H. L. A. Swann, Mr. L. S. Swinerton-Dyer, Major R. Tandy, Messrs. T. Tandy, J. Kenneth Taylor, George Terrell, G. G. Terrell, Capt. Reginald Terrell, Messrs. Julian Tritton, A. N. Eyre Turbett, Geoffrey Turbett, F. G. Umpleby, Sir Herbert Walker, Messrs. W. K. Wallace, C. E. Ward, E. P. Warner, W. A. Willox, J. A. Wilding, J. H. Wilding, Major Charles Williams, Messrs. H. R. Williams, Arthur Wilyman, R. S. Wood, George W. Woolliscroft, W. E. Yates and P. C. Young.

Mr. W. A. Stanier, Chief Mechanical Engineer, L.M.S.R., proposing the toast of "Past and Present Crewe Pupils and Premiums," welcomed the opportunity of meeting so many past Crewe men. There were just as good men coming along at Crewe now as ever before, he pointed out. They could not all be absorbed there afterwards and he looked to the past Crewe men to help.

Mr. H. N. Gresley, Chief Mechanical Engineer, L.N.E.R., responding to the toast on behalf of past Crewe men, remarked that this was his fortieth attendance at the Crewe dinner. He recalled some of the early dinners, and those attending, including Sir John Aspinall, Mr. Wilson Wordsell, and Mr. H. A. Ivatt. When he went to Crewe the locomotive stock, he thought, was a little too much inbred. After the compound days things went on very

well until grouping, when Mr. George Hughes introduced new blood, giving fresh strength. Then came the period of Derby influence, and now that of Swindon. Those who came from Crewe had always derived great benefit from it. Crewe ideas were followed all over the world. His own engines had Crewe features. He had just finished an eight-coupled engine for running Edinburgh-Aberdeen services, which had been named *Cock o' the North*.

Mr. G. E. C. Mossley responded to the toast on behalf of present Crewe men.

Captain H. P. M. Beames, proposing the toast of "The Guests," said that their distinguished guests were welcomed by every past and present Crewe man. Mr. Stanier had already contributed a notable achievement to the L.M.S.R. Among the guests were Sir Herbert Walker, General Manager, Southern Railway, whom he well remembered in his earlier days on the L.N.W.R.; his old friend, Mr. R. E. L. Maunsell, Chief Mechanical Engineer, Southern Railway, and, like himself, from Ireland; Lt.-Col. A. H. L. Mount, Chief Inspecting Officer of Railways, Ministry of Transport; and two distinguished representatives from the United States, Mr. L. F. Korb and Mr. D. Newkirk.

Mr. G. Terrell, in humorous vein, responded to the toast in place of the Rt. Hon. J. H. Thomas, who was to have been the guest of honour, but was unable to attend. Mr. Newkirk also responded.

Mr. George Hughes, proposing the toast of "The Chairman," said that the Crewe dinner, Crewe works and Captain Beames were almost synonymous.

Captain H. P. M. Beames in reply said this was the last Crewe dinner at which he would appear as a present Crewe man, for he was about to retire from the service of L.M.S.R. He said it was Mr. George Hughes who had made possible the reorganisation of the Crewe works and he took the opportunity of paying tribute to all who had made his life so happy and progressive for close on forty years, to the workmates and enginemen of his early days at Crewe, to the chief draughtsmen, foremen, colleagues and assistants and especially to Mr. F. A. Lemon, whose loyal assistance had enabled him to turn a jumble of shops housing a heterogeneous collection of machinery into one of the finest and most efficient works in the world, in which it had been possible to reduce the time required to repair a main line locomotive from three months to 47½ hours; to Mr. Webb, Mr. George Whale, Mr. Bowen Cooke, Mr. George Hughes, Mr. E. J. H. Lemon, and his present chief, Mr. Stanier. Captain Beames paid tribute also to his colleagues of other railways, Mr. H. N. Gresley, Mr. R. E. L. Maunsell, to his friends in the trade, between whom and him-

self there had always existed the most cordial relationship, and to his friends of the technical press, Mr. Loughnan St. L. Pendred, of *The Engineer*; Mr. F. C. Colman, of *Modern Transport*; and especially to Mr. J. A. Kay and Mr. Chas. S. Lake, of *THE RAILWAY GAZETTE*, for that splendid publication, "The Reorganisation of Crewe Locomotive Works" which he thought should be in the library of every railway engineer. "To these and to all my other friends," he concluded, "I say goodbye from the bottom of my heart."

Mr. G. W. Woolliscroft proposed the toast of the Secretary, Captain Reginald Terrell, without whom he could not conceive what the Crewe dinner would be like. Captain Terrell, replying in characteristic style, said he had no doubt that after 40 years of railway service Captain Beames' work was not yet finished.

Tungum Alloy

We recently paid a visit to an interesting exhibition at the Mercantile Exchange, 1, St. Paul's Churchyard, London, E.C., and which will be continued until Saturday, May 19, where a demonstration is given of the uses to which the material known as Tungum alloy has already been successfully applied, whilst numerous others are forecast. Tungum is a copper base alloy of rich golden colour. It has a high resistance to acid corrosion and its physical characteristics are similar to those of mild steel. The latter property is of considerable importance both to designers and commercial users requiring a non-ferrous metal of high tensile strength.

At the exhibition the Tungum was shown in the form of wire, sheets, strips, tubes, bars, numerous sections, and also in the form of castings. Some very fine examples of ornamental work for architectural purposes were also on view. In addition, articles of furniture are available for inspection, a particular feature being the length of time which the metal remains free from tarnish and other discolorations.

There should be a considerable field for the application of Tungum alloy on railways in the locomotive and carriage as well as in the hotel and other departments. For instance, it should have a distinct advantage when used for boiler staybolts and similar purposes; also for such articles as the ends of luggage racks, table lamp standards, roof and other fittings in the dining cars and coaches. A great point in its favour is the saving of weight which can be effected by its use, its ductility affording easy manipulation, attractive appearance and other useful qualities. It is readily adaptable for taking chromium plating and other finishes and can be welded, brazed or soldered.

The material is marketed by Tungum Sales Co. Ltd., Iddesleigh House, 32, Caxton Street, London, S.W.1.

RAILWAY AND OTHER REPORTS

South Indian Railway.—The directors have decided to pay on July 2, 1934, an interim dividend from surplus profits of 2 per cent., less income tax (compared with 2 per cent. paid on July 1, 1933), making with the interest guaranteed for the half-year ending June 30, 1934, namely, 1½ per cent., less income tax, a total distribution for the half-year of 3½ per cent.

Ransomes & Rapier Limited.—The accounts show a net loss for 1933 of £32,861, compared with a net profit for 1932 of £10,813. The sum of £23,414 is brought in and £11,056 is transferred from reserve, making £1,609 available. Of this the preference dividend absorbs £700, leaving £909 to go forward. Orders booked were fewer than in any year since 1923, their prices being also less remunerative, but a marked improvement was shown by the first quarter of the current year. The range of standard products has been extended to provide more remunerative work, a feature being the production of industrial roadless tractors.

Thames Valley Traction Co. Ltd.—This company is controlled jointly by Tilling & British Automobile Traction Limited and the Great Western and Southern Railway Companies. For the year 1933, after deducting from the gross receipts all items chargeable to revenue, including depreciation and writing down goodwill by £7,661, and after adding £6,441 brought forward, there remains a sum of £13,798, out of which the directors recommend a dividend of 5 per cent. per annum on the share capital, absorbing £7,500, leaving £6,298 to be carried forward. During the year the subsidiary undertaking of Marlow & District Motor Services Limited has been absorbed, and eight small omnibus businesses have been acquired. The company has sold to the London Passenger Transport Board a small portion of its undertaking. The net amount paid for goodwill as a result of all these transactions is £15,161. Investments include £5,000 in London Coastal Coaches Limited.

Antofagasta (Chili) & Bolivia Railway.—The directors announce that although the accounts for the year 1933 are not yet completed, the net revenue for that year, including £155,000 received from the Andes Trust Limited, and income arising from other investments, was approximately £382,000. After deducting about £15,000 for loss due to differences in exchange, £32,500 balance of amount provided under the lease of the Aguas Blancas Railway and £230,447 for interest on the debenture stocks, there remains an amount of £104,000 to be added to the balance brought forward from 1932. It is proposed to transfer £38,000 to renewals accounts (making the total contribution to those accounts for the

year about £50,000), £70,000 to exchange reserve account, and to carry forward approximately £241,000, compared with £244,753 last year. The directors regret that owing to the large currency balances which are accumulating in Chile and Bolivia, the uncertainty as to when it will be possible to remit them and at what rates of exchange, they are unable to recommend a payment on

account of the arrears of dividend on the 5 per cent. cumulative preference stock.

Associated Equipment Co. Ltd.—At their meeting on May 7 the directors resolved that an interim dividend at the rate of 2½ per cent. be paid, subject to deduction of income tax, to the members who were on the register at that date, in proportion to their respective holdings of stock (being at the rate of 5d. per £1 unit of stock after deduction of income tax at the rate of 4s. 6d. in the £1).

RAILWAY AND OTHER MEETINGS

SAN PAULO (BRAZILIAN) RAILWAY CO. LTD.

The ordinary general meeting of the proprietors of the San Paulo (Brazilian) Railway Co. Ltd. was held yesterday (Thursday) at Southern House, Cannon Street, E.C., Mr. Oliver R. H. Bury, M.Inst.C.E. (Chairman of the company), presiding.

The London Manager and Secretary (Mr. Vernon Hinde) read the notice convening the meeting.

The Chairman, in moving the adoption of the report and accounts, said that at the last annual meeting he had found it difficult to forecast the prospects of the year. In the course of his remarks he had laid some stress upon the situation which obtained in relation to the accumulation of funds in Brazil by reason of exchange restrictions, and had expressed the hope that, as a result of conversations then proceeding, some arrangement might shortly be concluded. Following the unsettled conditions of the year 1932 and the depression of the preceding years, in which the full effects of the world crisis were felt in Brazil, the year 1933 might be described as a period of gradual reconstruction and recovery. These more settled conditions were reflected in the results of the working of the railway.

Proceeding, the Chairman said it was of interest to state that the diesel electric train mentioned at the last meeting had now been delivered in Brazil and had undergone satisfactory tests. It was confidently expected that this equipment would enable them still further to improve the passenger service, particularly between San Paulo and Santos.

They had reduced the passenger fares on the Bragantina extension in order to counter road competition, and the results had given an increase in the number of passengers almost to compensate for the reduction in the prices of the tickets. They had also adjusted their rates to meet the altered conditions and the measures had given favourable results. They were sending out a Sentinel train set early next month, which it was believed would assist in passenger working and ensure an expeditious service between the Zone and San Paulo.

Their road transport organisation, which was operated by the subsidiary company, completed last year its first full year of operation. The services which the company was operating consisted of all road passenger and goods traffic and co-ordinated road rail and mutual traffic with their railway, so that door to door service was ensured to the public. The results taken in conjunction with the traffic handed to the railway were sufficiently encouraging to justify further increases in both passenger and freight fleets.

With regard to the prospects of the current year, so important was the influence of exchange upon their working that it would be most difficult for him to attempt to make a confident prediction. The coming coffee crop was estimated at 10,300,000 bags. The price of coffee had recently increased, and having regard to the stocks now in the warehouses, they might hope for a bigger movement in that commodity. Cotton and fruit had a promising outlook and they might expect the meat traffic to show an improved tendency.

The resolution was unanimously agreed to.

Forthcoming Events

- May 11 (Fri.).—Institution of Railway Signal Engineers. Visit to Stanmore, Metropolitan Railway. Smoking Concert at Portman Rooms, Baker Street, London, W.1, 8.15 for 8.30 p.m.
Railway Club, 57, Fetter Lane, London, E.C.4, 7.30 p.m. "The History of the British Non-stop Express," by Mr. R. B. Fellows.
May 12 (Sat.).—Permanent Way Institution (Manchester-Liverpool), at Birkenhead, 3 p.m. Visit of Vice-President. "Railway Curves and the Quest for Speed," by Mr. W. Hepworth.
L.N.E.R. (Great Central) Lecture and Debating Society, at University College, Nottingham, 5 p.m. Annual General Meeting.
May 14 (Mon.).—L.M.S.R. (London) Amateur Dramatic Society, at Cripplegate Inst., Golden Lane, E.C.1, 8 p.m. "London Wall."
Permanent Way Institution (London), in Staff Dining Room, Waterloo Station (S.R.), 7 p.m. "The Re-alignment and Re-grading of Track in Tunnels," by Mr. L. G. B. Rock.
May 16 (Wed.).—Engineers' Study Circle, at Denison House, 296, Vauxhall Bridge Road, London, S.W.1, 8 p.m. "Reconstruction," by the Right Hon. Harold Macmillan, M.P.

NOTES AND NEWS

Southern Railway Bill.—This Bill was read a third time and passed in the House of Commons on May 2. It was read a first time in the House of Lords on May 3, and referred to the examiners.

Improvements to Kinghorn Station, L.N.E.R.—Improvements are at present being made to the L.N.E.R. station at Kinghorn. The up platform is being widened by approximately 5 ft. over a distance of about 175 ft., and the waiting shed on that platform, which at present measures 31 ft. 6 in., is being extended to 42 ft. 6 in.

Dutch Diesel Trains.—Intensive running-in trials of the first score or so of the 40 high-speed diesel trains of the Netherlands Railways are being carried out in readiness for their introduction into regular service with the commencement of the summer time-tables on May 15. Last week one of the cars made a return trip between Amsterdam and Arnheim, and reached a maximum speed of 90 m.p.h.

Standardised Departure Times from Paddington, G.W.R.—The accompanying illustration is reproduced from a photograph of a portion of the new train indicator board at Paddington, which was illustrated and described in our issue of April 6. It is interesting as showing the standard departure times which were instituted nearly ten years ago when the time-tables were revised commencing with the summer service in 1924. As will be seen, with the exception of the 12 noon train and night trains, all the expresses to the West of England leave at the even half hour, 10.30, 1.30, 3.30, 4.30, and 6.30. The standardised departure times for Birmingham and the north, which were at ten minutes past the hour, are not so uniform as was previously the case, as two of the trains leave at five

minutes past the hour, namely, 11.5 and 4.5, thus breaking the sequence which otherwise would have been 9.10, 11.10, 2.20, 4.10, and 7.10. On the other hand, the standardised times of the South Wales expresses are well maintained, trains leaving at 8.55, 11.55, 3.55, 5.55, and 7.55.

Scottish Motor Traction Co. Ltd.—The directors have decided to issue new shares of £1 each to ordinary shareholders at 34s. per share. The offer is made in the proportion of one new share for every six ordinary shares held. The L.N.E.R. and L.M.S.R. are each large shareholders.

The Week's Road Accidents.—The Secretary to the Ministry of Transport has issued the following return, for the week ended April 28, of persons killed or injured in road accidents:—

	Killed in accidents reported during the week	Reported during the week as having died as the result of accidents occurring in previous weeks	Injured in accidents reported during the week
England ...	No. 82	No. 30	No. 3,535
Wales ...	1	1	149
Scotland ...	12	—	328
Great Britain	95	31	4,012

The total fatalities of the week as the result of road accidents are therefore 126, as compared with 133 for the preceding week.

Festiniog Railway Prospects.—The annual general meeting of this undertaking was held at Wellington House, Buckingham Gate, on May 4, Mr. Evan R. Davies, chairman of the company, presiding. In moving the adoption of the annual report and accounts for 1933, he said there were increases in gross receipts of £1,700 over 1932 and in net receipts of £164. There had been a welcome and gradual improvement in the slate trade, and the revenue from holiday passenger traffic showed a gratifying increase. The board was carefully and judiciously pursuing the policy of over-taking arrears and maintaining and improving the permanent way and rolling-stock. Negotiations were pending to clear arrears of debenture interest. The prospects for the ensuing season were promising. The

L.M.S. Railway was extending its powerful aid to develop holiday passenger traffic. A large number of long-distance excursions would be run this year to Snowdonia from all parts of the country, to include a trip over the Festiniog Railway. The report and accounts were adopted.

Enfield West (Oakwood) Station.—The London Passenger Transport Board has recently given consideration to the name of Enfield West station on the Piccadilly line, following suggestions that a more detailed description of the location of this station was desirable. It has now been decided to supplement the name Enfield West with the word Oakwood, and this now appears upon the station platforms and will, in future, be used throughout the system as a supplemental name.

Agreed Charges.—Five more applications for the approval of agreed charges under the provisions of Section 37 of the Road and Rail Traffic Act, 1933, have been lodged with the Railway Rates Tribunal, as will be seen from the legal notice published on p. 861. These applications may be inspected at the office of the Tribunal, 2, Clement's Inn, W.C.2, at the Railway Clearing House, and at 11 named centres outside London. Notices of objection must be filed at the office of the Registrar (2, Clement's Inn) on or before May 29.

L.N.E.R. Wages in Scotland.—The claim that the wages staff employed by the London & North Eastern Railway Company in Scotland should be paid wages weekly, instead of fortnightly, as at present, has been allowed by the National Wages Board. At the hearing the company submitted that though it had no objection in principle to the payment of wages weekly, the advantage to the staff would be insufficient to justify the additional cost, which would be approximately £10,000 per annum. The number of men affected is about 16,000, and the total wages paid to them approximately £2,400,000. The board's decision will become operative within 12 months in all cases.

Irish Railway Wages.—Agreement has been reached between the Irish Northern and cross-border railway companies and the three railway unions upon the rates of wages and salaries which are to operate as from May 1, 1934, until May 1, 1935. All conciliation grades (but exclusive of road motor passenger staff), stationmasters and goods agents, male and female clerks, and supervisors accept a 10 per cent. deduction from earnings, based on the rate of pay in operation prior to May, 1931, subject to the net earnings not being reduced below 40s. a week on Group 1 railways or 30s. a week on Group 3 railways. Where the earnings are 40s. a week or less in Group 1, or 36s. in Group 3, the deduction is to be at the rate of 7½ per cent. These rates apply to the following railways:—Great Northern; Sligo, Leitrim &

TIMES OF DEPARTURE OF PRINCIPAL EXPRESS TRAINS		
WEST OF ENGLAND		SOUTH WALES
10.30 AM		8.55 AM
12.0 PM		11.55 AM
1.30 PM		3.55 PM
3.30 PM		5.55 PM
4.30 PM		7.55 PM
6.30 PM		9.25 PM
9.50 PM		12.55 AM
1.40 AM		
	BIRMINGHAM AND NORTH	
	9.10 AM	
	11.5 AM	
	2.10 PM	
	4.5 PM	
	6.10 PM	
	7.10 PM	
	1.30 AM	

Standardised G.W.R. departure times on the new train indicator board at Paddington

Northern Counties; Dundalk, Newry & Greenore; and to the L.M.S.R. (Northern Counties Committee) and the County Donegal Railways Joint Committee. Holidays with pay are restored.

Engineers and Reconstruction.—The Rt. Hon. Harold Macmillan, M.P., is to address the Engineers' Study Circle on Economics on "Reconstruction," at a meeting to be held at Denison House, 296, Vauxhall Bridge Road, Victoria, S.W.1, on May 16, at 8 p.m. The chair will be taken by Sir Richard Gregory, Bart., F.R.S. Tickets can be obtained free on application to the Hon. Secretary of the Circle, Col. P. H. Johnson, Gunnersbury House, Hounslow, Middlesex.

Funicular Railway for Majorca.—According to Reuter, a funicular suspension railway is to be built to the summit of the loftiest peak in Majorca, the Puig Mayor, which rises to a height of 4,500 ft. Plans for the railway have already been approved by the authorities and a company is to be formed to raise the necessary capital of 2,000,000 pesetas (£54,000). The motor road from Inca to Lluch is to be continued as far as La Calobra, and the lower station of the funicular is to be constructed just above this village.

L.N.E.R. Demonstration at Hull.—Some 2,801 scholars and 112 teachers visited the railway demonstration for school children at Hull Paragon station during the fortnight April 16 to 28. The demonstration was arranged to afford school children an opportunity of gaining first-hand knowledge of railway working. Qualified lecturers were supplied by the L.N.E.R. to explain and demonstrate the various exhibits, which included a modern locomotive in steam, locomotive instruction van, sleeping car, restaurant car, Royal Mail van, models, and signalling equipment.

Swedish Private Railways in 1933.—Like the State Railways, the private railways in Sweden show better results for 1933, according to press reports from Stockholm, in both cases owing principally to a reduction in running costs, earnings being almost unchanged. Earnings in 1933 of all the private railways amounted to Kr. 99,760,000 compared with Kr. 100,010,000 in 1932. There was a slight increase in takings from goods traffic and a decrease from passenger traffic. As expenditure was reduced from Kr. 85,130,000 in 1932 to Kr. 81,660,000 in 1933, the surplus rose slightly to Kr. 18,100,000 against Kr. 14,880,000 in 1932. After deduction of interest and depreciation, the net result is a deficit of Kr. 1,910,000 compared with a deficit of Kr. 6,560,000 for 1932. The number of passengers carried during the year was 30,860,000 compared with 31,340,000 in 1932, and the quantity of goods transported 14,440,000 tons, compared with 13,820,000. As usual, most of the large railways had remunerative traffic and 33 companies were able to report a

moderate net profit, while 63 companies had a loss.

Harz Mountain Railway.—The regular train service on the Drei Annen-Hohne-Brocken line began on May 9. The Brocken is the highest peak in the Harz Mountains.

L.M.S.R. Ambulance Work at Liverpool and Wigan.—Additional classes, two at Liverpool and one at Wigan, have been formed by the L.M.S.R. for the instruction of employees in first aid. The two Liverpool classes are respectively at Lime Street (Secretary, Mr. F. Poole, Carriage and Wagon Department), and at Bixteth Street (Secretary, Mr. L. R. Lewis, Goods Department, North Docks), while the Wigan class is known as Wigan C, the Secretary being Mr. W. S. Richardson, Traffic Department.

Canadian Railway Car Loading.—The railway situation in Canada continues to show an improvement, the net earnings of both systems being higher than last year. Rail traffic, as reflected by car-loading figures, has shown a marked improvement week by week, according to Reuter. The figure for the week ended April 21 was 44,505, compared with 41,578 for the previous week and 34,156 for the same week in 1933. Total car loadings since the beginning of the year have been 656,500 compared with 527,500 for the same period in 1933.

Sentinel Railcars in Belgium.—In an editorial note last week entitled "Belgians like Railcars," it should perhaps have been made clearer that each of the three Sentinel cars in the Liège district has covered nearly 60,000 miles per annum. The relevant sentences should have read as follows: "There are three Sentinel cars at work in the Liège district which have never faltered for over three years. During the period November, 1930, to October, 1933, these cars covered altogether 536,021 miles, or nearly 60,000 miles each per annum, on local services without a heavy overhaul and with extreme economy."

L.M.S.R. Women's Ambulance Competition.—The annual ambulance competition for the women staff of the L.M.S.R. was held at the Midland Grand Hotel, St. Pancras, on Friday last. There were 17 teams competing, and the competition lasted from 9 o'clock in the morning until 5.30 in the afternoon, when Lady Stamp presented the prizes to the winning teams. Mr. E. J. H. Lemon, Vice-President of the L.M.S.R., was in the chair and Miss Mervyn, Welfare Assistant for Women and Girls, moved a vote of thanks to Lady Stamp. The order of the teams with the number of marks obtained out of the possible 350 was as follows:—Euston Audit, 277½; Derby Offices, 271; Euston Odds., 266½; Manchester (2), 266; Bristol, 259½; Wolverton, 256; Preston, 255½; Glasgow (A), 255½; Euston (2), 254; Glasgow (B), 252; Dublin, 242; Manchester (3), 236½; Birming-

ham, 231½; Camden, 230; Derby (C. & W.), 228½; Leeds, 225½; Manchester (1), 212.

Diesel Railcar Service to Oxford.—The G.W.R. has extended to Oxford one of the 16 local daily services worked by the streamlined A.E.C. diesel railcar. This is the service due at Didcot at 6.9 p.m. from Reading and Slough. The new service leaves Didcot at 6.10 p.m., and after calling at Appleford Halt, Culham, and Radley, is due at Oxford at 6.32 p.m. On the return journey the car leaves Oxford at 6.42 p.m. and runs non-stop to Didcot, where it is due at 6.56 p.m. in time to make the present advertised departure for Reading and Southall at 6.58 p.m. Since it was introduced three months ago over 40,000 passengers have travelled on the railcar.

Reconstruction of Derwent Viaducts, L.M.S.R.—Three important viaducts on the London to Manchester main line of the L.M.S.R., via Derby, are being reconstructed. These are all concentrated in the 10½-mile section between Derby and Ambergate, and it has been found convenient, therefore, and possible, thanks to the existence of alternative routes, to close the line entirely and concentrate upon the heavier jobs at these viaducts every Sunday between May 6 and July 8. The arrangements made for diverting the traffic without serious delay are detailed in an editorial on page 829. The viaducts are over the tortuous River Derwent and their rebuilding is necessary to carry heavier locomotives. Specially designed appliances are in use to enable cylinder sinking to be carried on under the girders.

Inter-railway Ambulance Competition.—The annual contest for the Inter-railway Challenge Shield and prizes of the St. John Ambulance Association will be decided at the Wharncliffe Rooms, London, on Tuesday, May 15, when the competing teams will be:—G.W.R., South Lambeth, and Pontypool Road; L.M.S.R., Crewe machine shop, and Accrington Loco.; L.N.E.R., Parkeston and Harwich (G.E. Section), and Dukinfield works (G.C. Section); S.R., Horsham No. 1, and Waterloo B.; ungrouped railways, Cheshire Lines Committee. Each of the competing teams has been selected by a series of competitions organised by its respective railway, and the participants in the Inter-railway competition are the survivors from an original entry of about 1,000 railway teams. The team to represent the ungrouped railways was selected by a preliminary competition held at St. John's Gate on March 23. The judges for the Inter-railway contest will be Captain A. C. White Knox, M.C., M.B., of London (for the team test), and Lieut.-Col. M. MacEwan, D.F.C., T.D., M.B., of Ipswich (for the individual tests), and the presentation of the shield and prizes will be made about 4.0 p.m. by Sir Josiah Stamp, G.B.E., D.Sc., President

of the Executive, L.M.S.R. The present holders of the trophy are the Great Western Railway, and the winning team last year, Pontypool Road, will participate again this year.

Brighton "Bathing Specials."—The "Bathing Specials," to begin on May 22 and run every Tuesday, Wednesday and Thursday throughout the season, will leave Victoria at 6.5, 6.30 and 7.5 p.m., returning from Brighton at 9.38, 10.8, 10.25 and 11.10 p.m. The return fares are to be 4s. from Victoria, 3s. from East Croydon, and 2s. 6d. from Redhill.

Fares Reduction Vindicated in New Zealand.—Statistics of the New Zealand Railway Board for the year ended March 31 last show an improvement in revenue and an increase in the passengers and goods carried. The Board considers that the policy of a reduction in fares has been vindicated, there being a net revenue of £1,085,570 sterling, an increase of £235,026 over that of the previous year.

Institute of Transport Congress.—This Congress is being held at Leeds between June 6 and June 9. The sessions will take place at the University. Visits will be paid to the new signalling installation at Thirsk, to the reclamation yard at Darlington, L.N.E.R., to the diesel engine works of J. & H. McLaren Limited, to Doncaster works, L.N.E.R., to Karrier Motors works at Huddersfield, and to the Aire & Calder Navigation, as well as to pleasure resorts such as Ripon and Fountains Abbey. Papers will be read upon the following subjects:—"The Transport Requirements of Industry," "The Public Control of Passenger Transport outside London," and "The Price Issue in Public Utility and Monopolistic Industries."

Great Eastern Amateur Athletic Association.—The annual dinner of this association was held at Liverpool Street on April 28, when Sir Charles Batho, a Director of the L.N.E.R., presided. He was supported by Sir Murrough Wilson, the newly appointed Deputy-Chairman of the L.N.E.R.; Mr. H. H. Mauldin, Superintendent and Chairman of the association; Mr. C. H. Newton, Chief Accountant; Mr. R. R. Pettit, Chief of Police; Dr. McMahon, Medical Officer; Mr. F. C. Wilson, District Superintendent; Mr. H. F. Sanderson, Assistant District Superintendent, and the officers of the association. In replying to the toast of "The G.E.A.A.," Mr. Mauldin said that as Chairman his job was comparatively easy, compared with the hard graft of Mr. Frost, the General Secretary, and Mr. Freshwater, the Financial Secretary. There were indications of brighter times ahead; recruiting had recommenced and there were hopes of increased membership. They had passed the time when they were, so to speak, off the gold standard. The association

did wonderful work not only in making good sportsmen, but also good railwaymen, the team work being in evidence every day in their daily work.

London Transport Fleet Name.—The London Passenger Transport Board has now decided to use the fleet name "London Transport" for all its railway cars, buses, and tramcars, in lieu of such words as "Underground" and "General." Vehicles will be changed in this respect as they go in for overhaul and painting. For the moment the fleet name "Green Line" is being retained for coaches to avoid confusion with single-deck buses. We gather that a special sign in front may eventually be used.

British Standard Bevel Gears.—A further step has been made by the British Standards Institution in the standardisation of machine-cut gearing with the issue of B.S.S. No. 545—1934 Machine Cut Gears, B. Bevel, for helical, curved and straight teeth, which deals with the matter in the same comprehensive way as the Helical and Straight Spur Specification issued in 1932. Copies of this specification (B.S.S. No. 545—1934) can be obtained from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 5s. net, 5s. 6d. post free.

Plymouth-Liverpool Air Line.—On Monday last, May 7, Railway Air Services Limited inaugurated, on behalf of the Great Western Railway, an air service between Plymouth and Liverpool, via Haldon (for Teignmouth), Cardiff, and Birmingham. It is being operated once daily (except Sundays) until July 28 on the present schedule, whereby aircraft leave Roborough aerodrome, Plymouth, at 8.50 a.m. and arrive at Speke aerodrome, for Liverpool, at 12 noon. The return trip leaves Speke at 3.30 p.m., and arrives at Roborough at 6.40 p.m. Special (connecting) cars run between Plymouth and Roborough, Teignmouth and Haldon, Cardiff General station and Cardiff airport, Birmingham, Snow Hill station and Castle Bromwich aerodrome, and between three central points in Liverpool and Speke. Air mail is not being carried. The service is being worked by a De Havilland Dragon 8-seat aeroplane with Imperial Airways pilots.

Stewarts and Lloyds Corby Works.—Presiding at the ordinary general meeting of Stewarts and Lloyds Limited in Glasgow on May 1, Mr. A. C. Macdiarmid (the Chairman) gave an interesting description of the new developments at Corby, where the company owns or controls some 500,000,000 tons of the ironstone deposits of Northamptonshire, which are suitable for the manufacture of basic Bessemer steel. Since with modern equipment the ore can be cheaply mined, treated and smelted, the new operations at Corby, which will be continuous from the ore to the finished tube, will result in the production of steel and tubes at an

exceptionally low cost. To carry out this programme, a complete modern plant is being installed for increasing the output of the mines, preparing and treating the ores, and smelting them by modern methods. The first tube mills to be installed will produce tubes up to 4½ in. diam. A new tube process is being installed which is designed to take full advantage of the integrated system of manufacture. At Corby there will be installed for the first time in this country a complete, self-sufficient, balanced, and integrated plant using the latest and most efficient machinery to produce the finished tube by a continuous process from the raw material quarried in the immediate neighbourhood of the works.

London Transport C Stock.—The London Passenger Transport Board, in a statement issued on Wednesday, announced its intention to apply to Parliament for permission to introduce a late Bill to vary the terms of the London Passenger Transport Act, 1933, to meet the position which will arise in regard to payment of interest on C stock when the Board's first year's operations are concluded on June 30 next. The proposal is that the time within which the accounts of the Board for its first financial year ending June 30 next must be prepared, audited and published be extended to the date for the preparation of the accounts for its second financial year. In the meanwhile the Board desires authority to make a payment on account of the interest on the C stock for the first financial year, based on an estimate by it of what its revenues for the year and applicable to that purpose will be, such payment on account to be followed by a final adjusting payment after the accounts for that year have been finally settled and audited.

L.M.S.R. Holiday Caravans.—During this week the L.M.S.R. is exhibiting at Euston station one of its new holiday caravan coaches, which are similar to the camping coaches already introduced by the L.N.E.R. and G.W.R. These caravans, which are to number 42 in all, are converted L.N.W.R. third-class corridor bogie vehicles. The cost of hiring a caravan, inclusive of linen, crockery, &c., will be £3 10s. a week during July, August and September, and £3 a week at any other time. Although the in-season charge is higher than those of the G.W.R. and L.N.E.R., this may be explained by the fact that the coaches are larger and have the benefit of a corridor connection between the living room and berth compartments—a feature likely to be appreciated in our uncertain climate. Already some of these caravans, the specimen of which is exciting considerable interest at Euston, have been booked for the Whitsun holiday. A variety of suitable sites for the caravans have been selected in Yorkshire, Lancashire, Shropshire, Derbyshire, Leicestershire, Gloucestershire, Wales, and the Lake District.

CONTRACTS AND TENDERS

The North British Locomotive Co. Ltd. has secured an order for five super-heated boilers for 9th class 4-8-0 type mixed traffic locomotives for the Rhodesia Railways to the inspection of Sir Douglas Fox & Partners, consulting engineers.

Nasmith Wilson & Co. Ltd. has received an order for one saturated steam locomotive boiler for F class mixed traffic 0-6-0 locomotive, Gondal Railway, to the inspection of Messrs. Robert White & Partners, consulting engineers.

The Metropolitan-Vickers Electrical Export Co. Ltd. has received an order from the Nyasaland Railways Limited for the supply of electric lighting and power plant for the Limbe workshops. The equipment includes two alternators and Petter engines, one motor generator and eleven motors.

Standard Telephones & Cables Limited has secured an order from the Chinese Government Purchasing Commission on behalf of the Ministry of Communications for a Radio Link system for internal communication in China. The work will be carried out to the inspection of Messrs. Fox & Mayo, consulting engineers.

The Uruguayan Government has authorised the Administration of State Railways and Tramways to accept a tender submitted by the Railway Equipment Company of Argentina for supplying four motor coaches of the Brill type, at the price of \$24,700 each, delivered in Montevideo ready for immediate use.

The Werkspoor Co. N.V., of Amsterdam, has received an order from the Dutch Department of Mines for two heavy 2-8-2T locomotives for service round the State coal pits in Limburg. The same firm is also to construct the mechanical portions of the seven diesel loco-tractors, with Stork-Ganz engines, ordered by the Netherlands Railways, and noted in this column in our issue of April 27.

The Westinghouse Brake & Saxby Signal Co. Ltd., London, has secured the contract for the installation of train description apparatus between Fenchurch Street, Stepney East, and Gas Factory junction, two down roads and two up roads being involved between Fenchurch Street and Stepney East, and an up and down road between Stepney East and Gas Factory junction. The apparatus to be installed is the Westinghouse Company's latest form of ribbon storage apparatus. This apparatus is distinguished from other forms of describing apparatus in that the descriptions stored in the receiving cabin take the form of perforations in a continuous paper strip, with the result not only that a permanent record of the descriptions is obtained (together, if necessary, with the date and time

that the description was received) but also that a very great economy in electrical apparatus is effected, together with a marked simplification in the circuits employed.

Diesel Railcars for the L.N.E.R.

Sir W. G. Armstrong, Whitworth & Co. (Engineers) Ltd. has supplied the L.N.E.R. with two additional 250-H.P. diesel-electric railcars similar to the *Tyneside Venturer* described and illustrated in the issue of THE RAILWAY GAZETTE for December 18, 1931. The new railcars are to be named *Lady Hamilton* and *Northumbrian*. They are to operate additional services in the Leeds, York, Harrogate, Hull, Selby, and Pontefract districts, and each will have accommodation for 60 passengers and be capable of a maximum speed of 65 m.p.h.

The Metropolitan-Vickers Electrical Co. Ltd. has secured a part contract from the Great Western Railway for the supply of Cosmos electric lamps for the twelve months ending April 30, 1935.

Following the contract recently received by the British Thomson-Houston Co. Ltd. for 26 electric control equipments and motor-driven compressors for the Piccadilly Line, as recorded in this column of THE RAILWAY GAZETTE for April 6, this company has now received another order from the London Passenger Transport Board for 325 sets of relays, contactors, resistances, &c. These equipments are being supplied in order to convert the present control gear fitted to motor coaches equipped with straight field motors to make them suitable for the control of shunted field motors.

Wagon Retarders for Hull, L.N.E.R.

Rail Brakes Limited has received from the L.N.E.R. the contract to supply and install four rail brakes of the Frölich type, together with the necessary power and control equipment for the new inwards marshalling yard at Hull. All the material for this important contract will be of British manufacture. The placing of this contract is interesting in that the L.N.E.R. has already a similar installation in the up marshalling yard at Whitmoor, where four Frölich brakes operated by two men have been in constant service for five years. In the new yard at Hull, however, by means of a suitably constructed control system, it will be possible for one man to operate all four brakes. The rail brakes for Hull will represent the latest practice in marshalling yard work and will embody improvements which have been evolved as the result of experience obtained from the operation of the Whitmoor installation and of many later installations abroad.

The Agent, East Indian Railway, has placed orders with the National Tannery Company for a total of 20,500 plywood and leather dust shields.

The Standard Telephones & Cables Limited has secured a contract from the Indian Stores Department for the supply of silk covered flex wire for the period July 2, 1934, to March 31, 1935.

Pritchett & Gold and E.P.S. Co. Ltd. has secured a rate contract from the Indian Stores Department for the supply of positive P. & G. N.T.15 plates for batteries for the period April 1, 1934, to September 15, 1934.

The North Western Railway of India has placed the following orders for permanent-way material:—

Henry Williams (India) (1931) Limited: 40 sets switches and eight right-hand and eight left-hand tongue rails at prices of Rs. 438 per switch set and Rs. 84 per tongue rail.

Burn & Co. Ltd.: 65 sets 1 in 12 left-hand acute crossings at Rs. 385 per set and 38 sets 1 in 8½ left-hand acute crossings at Rs. 340 per set.

Balmer, Lawrie & Co. Ltd.: 515 sets combination fishplates at prices from Rs. 25.14 to Rs. 35.7 per set.

The Egyptian State Railways Administration has recently placed orders as follow:—

Signalling materials: ref. no. E.S.R. 24.56. Thirteen offers received. Orders placed with Bullers Limited for items 3 to 6; Westinghouse Brake & Saxby Signal Co. Ltd. for items 1 and 2; and W. R. Sykes Interlocking Signal Co. Ltd. for item 7.

Tinned sheets: ref. no. E.S.R. 1.114. Six offers received. Order placed with H. J. Snelton & Co. Ltd.

Emery cloth: ref. no. E.S.R. 62.26. Eight offers received. Order placed with R. J. Edwards & Co. Ltd.

Milling and involute cutters: order no. 8.28 of February 10. Six offers received. Order placed with Samuel Osborn & Co. Ltd.

Steel files: ref. no. E.S.R. 309.G.3.1. Nine offers received. Order placed with Ibbotson Bros.

Switches: order no. 34.162 of January 22. Four offers received. Order placed with Ericsson Telephones Limited.

Saxby & Farmer (India) Limited, the Indian associated company of the Westinghouse Brake & Saxby Signal Co. Ltd., King's Cross, N.I., has received an order for the whole of the vacuum brake equipment for the wagons which, as stated in this column of THE RAILWAY GAZETTE for February 9 and March 30, are under construction by Burn & Co., Braithwaite & Co., and Jessop & Co., for the 1934-35 requirements of the Indian State Railways. All the equipment, with the exception of the piping and rubber fittings, is being made at the well-equipped works of Saxby & Farmer (India) Limited, Calcutta.

The South African Railways and Harbours Administration has recently placed orders as follow:—

Usines et Acieries Allard: Tender no. B5897/2, steel castings, items 2, 5, 8, 10, 14, 15, 26, 28, 30, 34, 38, 9, 45, at price of £603 12s. 4d.

Usines Gustav Boel: Tender no. B5897/2, steel castings, items 3, 4, 15, 17, 21, 29, 31, 3, 35, 6, 40, 4 and 46, at price of £1,140 9s.

Henricot Steel Foundry: Tender no. B5897/2, steel castings, items 23, 5, at price of £228 18s.

English Steel Corporation Limited: Tender no. B5897/2, steel castings, items 22 and 27, at price of £440 13s.

Parker Foundry (1929) Limited: Tender no. B5897/2, steel castings, item 37, at price of £66 12s.

Bayliss, Jones & Bayliss Limited: Tender no. B5890, fish bolts and nuts, at price of £2,836 4s. 7d.

Everitt & Company: Tender no. B5956, ferro-silica, at price of £11,931.

We understand that the metre-gauge Peloponnesus Railway proposes to purchase from an Austrian firm six petrol

railcars. In the first place two are being ordered for use between Patras and Olympia. A loan of £20,000 has been negotiated for this purpose.

The Lithuanian Ministry of Communications invites tenders, receivable at the Lithuanian Legation, 10, Palace Gate, Kensington, W.8, by May 30, for the supply of 50,000 tons of locomotive coal.

Tenders are invited on a rupee basis, receivable by May 28, for the purchase by the North Western Railway of India of a machine for machining piston valve liners.

The Chief Controller of Stores, Indian Stores Department (Engineering Section), New Delhi, invites tenders, receivable by May 21, for 400 each of buffer plungers, buffer spindles, buffer plunger plugs, and buffer casings required for the East Indian Railway. Tenders are also invited by the Chief Controller of Stores, receivable by May 28, for a quantity of locomotive buffers, buffer heads, sockets and casings, for the North Western Railway of India; for

locomotive and carriage and wagon tyres and axles for the Eastern Bengal, Great Indian Peninsula, North Western and East Indian Railways; and for quantities of galvanised and ungalvanised winding, guide and hauling ropes for the East Indian Railway.

The Viacao Ferrea do Rio Grande do Sul is calling for tenders, to be presented in Brazil by May 21, for the supply of 165 metric tons of square section iron, 14 mm., for dog spikes. Firms desirous of offering iron of United Kingdom manufacture can obtain the further details of this call for tenders from the Department of Overseas Trade.

The South African Railways and Harbours Administration is calling for tenders, to be presented in Johannesburg by May 28, for the supply of one electrically-driven 150-ton single track traverser. Firms desirous of offering a traverser of United Kingdom manufacture can obtain the further details from the Department of Overseas Trade.

British and Irish Railway Traffic Returns

GREAT BRITAIN	Totals for 18th Week			Totals to Date		
	1934	1933	Inc. or Dec.	1934	1933	Inc. or Dec.
L.M.S.R. (6,940½ mls.)	£	£	£	£	£	£
Passenger-train traffic...	420,000	409,000	+ 11,000	7,082,000	7,052,000	+ 30,000
Merchandise, &c. ...	467,000	435,000	+ 32,000	7,993,000	7,217,000	+ 776,000
Coal and coke ...	206,000	208,000	- 2,000	4,613,000	4,335,000	+ 278,000
Goods-train traffic ...	673,000	643,000	+ 30,000	12,606,000	11,552,000	+ 1,054,000
Total receipts ...	1,093,000	1,052,000	+ 41,000	19,688,000	18,604,000	+ 1,084,000
L.N.E.R. (6,339 mls.)						
Passenger-train traffic...	269,000	265,000	+ 4,000	4,596,000	4,589,000	+ 7,000
Merchandise, &c. ...	314,000	280,000	+ 34,000	5,673,000	4,987,000	+ 686,000
Coal and coke ...	218,000	191,000	+ 27,000	4,395,000	3,934,000	+ 461,000
Goods-train traffic ...	532,000	471,000	+ 61,000	10,068,000	8,921,000	+ 1,147,000
Total receipts ...	801,000	736,000	+ 65,000	14,664,000	13,510,000	+ 1,154,000
G.W.R. (3,750 mls.)						
Passenger-train traffic...	176,000	180,000	- 4,000	2,972,000	3,007,000	- 35,000
Merchandise, &c. ...	186,000	178,000	+ 8,000	3,186,000	2,878,000	+ 308,000
Coal and coke ...	93,000	93,000	—	1,926,000	1,863,000	+ 63,000
Goods-train traffic ...	279,000	271,000	+ 8,000	5,112,000	4,741,000	+ 371,000
Total receipts ...	455,000	451,000	+ 4,000	8,084,000	7,748,000	+ 336,000
S.R. (2,177 mls.)						
Passenger-train traffic...	261,000	260,000	+ 1,000	4,435,000	4,407,000	+ 28,000
Merchandise, &c. ...	63,000	55,000	+ 8,000	1,090,500	1,041,000	+ 49,500
Coal and coke ...	28,000	20,000	+ 8,000	624,500	572,000	+ 52,500
Goods-train traffic ...	91,000	75,000	+ 16,000	1,715,000	1,613,000	+ 102,000
Total receipts ...	352,000	335,000	+ 17,000	6,150,000	6,020,000	+ 130,000
Liverpool Overhead ...	1,056	1,064	- 8	19,314	18,835	+ 479
Mersey (4½ mls.) ...	3,896	4,102	- 206	75,157	71,953	+ 3,204
*London Passenger Transport Board ...	544,700	—	—	22,118,100	—	—
IRELAND						
Belfast & C.D. pass. (80 mls.)	1,847	1,931	- 84	33,357	33,976	- 619
" " goods	534	599	- 65	9,708	9,415	+ 293
" " total	2,381	2,530	- 149	43,065	43,391	- 326
Great Northern (562 mls.)	8,250	6,900	+ 1,350	135,200	69,050	+ 66,150
" " goods	8,450	9,200	- 750	148,250	72,950	+ 75,300
" " total	16,700	16,100	+ 600	283,450	142,000	+ 141,450
Great Southern (2,158 mls.)	23,432	22,365	+ 1,067	350,789	340,557	+ 10,232
" " goods	35,565	33,587	+ 1,978	581,515	558,691	+ 22,824
" " total	58,997	55,952	+ 3,045	932,304	899,248	+ 33,056

* 44th Week.

British and Irish Railway Stocks and Shares

Stocks	Highest 1933	Lowest 1933	Prices	
			May 9, 1934	Rise/Fall
G.W.R.				
Cons. Ord. ...	55½	31	55½	-1
5% Con. Prefce. ...	109½	69½	110½	—
5% Red. Pref. (1950) ...	109½	87½	109½	—
4% Deb. ...	108½	99½	108½	—
4% Deb. ...	108	100½	101½	—
4% Deb. ...	116	106	117½	—
5% Deb. ...	128	117½	128½	—
2½% Deb. ...	65	60	69½	—
5% Rt. Charge ...	124	111½	126½	—
5% Cons. Guar. ...	122	103	123½	—
L.M.S.R.				
Ord. ...	297½	12½	25	-1½
4% Prefce. (1923) ...	51	17	53½	-2
4% Prefce. ...	72	33½	77½	-½
5% Red. Prf. (1955) ...	93	47½	99	—
4% Deb. ...	103½	89½	103	—
5% Red. Deb. (1952) ...	114	105	111½*	-2
4% Guar. ...	97½	68½	98½	—
L.N.E.R.				
5% Pref. Ord. ...	22½	7¾	19	-½
Def. Ord. ...	105½	41½	91½	-½
4% First Prefce. ...	65½	19½	67	+½
4% Second Prefce. ...	40½	12½	36½	-1½
5% Red. Pref. (1955) ...	83½	27	87	—
4% First Guar. ...	94½	58½	96	—
4% Second Guar. ...	89½	48	90	—
3% Deb. ...	77	60½	78	—
4% Deb. ...	102½	80	102	—
5% Red. Deb. (1947) ...	112	102½	108½	—
4½% Sinking Fund Red. Deb. ...	107½	98½	106½	—
Southern				
Pref. Ord. ...	71	27¾	76	-1
Def. Ord. ...	24½	9½	26	-1
5% Prefce. ...	107½	74	110½	—
5% Red. Pref. (1964) ...	107½	78½	111½	—
5% Guar. Prefce. ...	124½	102½	124½	—
5% Red. Guar. Pref. (1957) ...	115½	103½	115½	+1
4% Deb. ...	107½	96½	105½	—
5% Deb. ...	126½	114½	126½	—
4% Red. Deb. ...	107½	100	106½	—
1962-67				
BELFAST & C.D.				
Ord. ...	6	4	5	—
FORTH BRIDGE				
4% Deb. ...	99½	95½	101½	—
4% Guar. ...	98½	94	101½	—
G. NORTHERN (IRELAND)				
Ord. ...	71½	31½	5	—
G. SOUTHERN (IRELAND)				
Ord. ...	28	16	20	—
Prefce. ...	24	12½	15½	+½
Guar. ...	42	16½	43	—
Deb. ...	60	30½	60	-5
L.P.T.B.				
44% "A" ...	117½	112	118½	—
5% "A" ...	127½	119½	128½	—
44% "T.F.A." ...	111½	106	109½	—
5% "B" ...	122½	114	122½	+2
5% "C" ...	86¾	74½	78½	-1
MERSEY				
Ord. ...	16½	5	15	—
4% Perp. Deb. ...	83	63½	87½	—
3% Perp. Deb. ...	62	51	65½	—
3% Perp. Prefce. ...	50½	27	53½	—

* ex-dividend.

LEGAL AND OFFICIAL NOTICES

IN THE COURT OF THE
RAILWAY RATES TRIBUNAL.Road and Rail Traffic Act, 1933.
Agreed Charges.

NOTICE IS HEREBY GIVEN that Applications for the approval of Agreed Charges under the provisions of Section 37 of the Road and Rail Traffic Act, 1933, short particulars of which are set out in the Schedule hereto, have been lodged with the Railway Rates Tribunal.

The said Applications may be inspected at the Office of the Tribunal, 2, Clement's Inn, Strand, London, W.C.2, at any time during office hours and at the following places:—

LONDON: Railway Clearing House, 123, Seymour Street, N.W.1.
BIRMINGHAM: District Goods Manager's Office, Snow Hill, Great Western Railway.
CARDIFF: Divisional Superintendent's Office, Great Western Railway.
DURHAM: Western Divisional Superintendent's Office, Southern Railway.
LEEDS: District Goods Manager's Office, Wellington Street, London & North Eastern Railway.
LEICESTER: District Goods and Passenger Manager's Office, London Midland & Scottish Railway.
MANCHESTER: District Goods Manager's Office, Hunt's Bank, London Midland & Scottish Railway.
SOUTHAMPTON: Southern Divisional Superintendent's Office, Southampton West, Southern Railway.
YORK: Goods Manager's Office, London & North Eastern Railway.
ABERDEEN: District Goods and Passenger Manager's Office, London Midland & Scottish Railway.

EDINBURGH: District Goods and Passenger Manager's Office, Waverley Station, London & North Eastern Railway.

GLASGOW: Commercial Manager's Office, Central Station, London Midland & Scottish Railway. A copy of each Application lodged with the Tribunal can be obtained from Mr. G. COLE DEACON, Secretary, Rates and Charges Committee, 35, Parliament Street, Westminster, London, S.W.1, price 1s., post free.

Notices of objection by any parties entitled to object to the approval of any of the said Agreed Charges must state concisely the grounds of objection and must be filed at the office of the Registrar, 2, Clement's Inn, Strand, London, W.C.2, on or before the 29th day of May, 1934, and a copy thereof on or before the same day served on or sent by registered post to Mr. G. COLE DEACON, at the above address. A separate Notice must be filed and served in respect of each Application.

Each Notice filed must be on foolscap size paper and must be stamped with an adhesive fee stamp for 2s. 6d. (which can be purchased at the office of the Tribunal only). If sent by post for filing each Notice must be accompanied by a Postal order for 2s. 6d. payable to the Registrar, when a stamp will be affixed at the office. A Notice by a Representative Body of Traders must contain a statement of the facts upon which such Body claims to represent a substantial number of traders interested in, or likely to be affected by the decision on, the application.

Four additional copies of each Notice must be lodged with the original at the office of the Registrar.

T. J. D. ATKINSON,
Registrar.

4th May, 1934.

Number of Application	Date of Lodgment	Parties to Agreement	Nature of Agreed Charge
1934, No. 73	May 1, 1934	APLIN & BARRETT AND THE WESTERN COUNTIES CREAMERIES, LTD., Yeovil, and the G.W. L. & N.E. L.M. & S. and SOUTHERN RAILWAY COMPANIES	Per ton. Butter, cheese, cream, sausages, cooked and preserved meats, &c.
" " 74	"	DOMINION DAIRY CO. LTD., Aylesbury, and the L.M. & S. RAILWAY COMPANY, L.P.T.B. (MET. SECN.), and G.C. JT. and G.W. & G.C. JT. RAILWAY COMPANIES	Per ton. Butter and cheese.
" " 75	"	JOHNSON BROTHERS (DYERS) LTD., Liverpool, and the G.W. L. & N.E. L.M. & S. and SOUTHERN RAILWAY COMPANIES and L.P.T.B. (MET. SECN.)	Per ton. (i) Dyed and cleaned goods. (ii) Goods for dyeing and cleaning. (iii) Returned empties.
" " 76	"	UNITED DAIRIES, LTD., London, and the G.W. L. & N.E. L.M. & S. & D. JT. and SOUTHERN RAILWAY COMPANIES and L.P.T.B. (MET. SECN.)	Per ton. Butter, cheese, cream, eggs, poultry, preserves, lard, margarine and sauces.
" " 77	"	WOLSEY, LTD., Leicester, and the L. & N.E., and L.M. & S. RAILWAY COMPANIES	Per package. Hosiery and advertising matter.

Railway Publications for Sale

"Intelligible Railway Guide for Great Britain and Ireland," August, 1933, 8s. 6d.
"Bradshaw's New Railway Map of Great Britain," 1934, 10s.
"Practical Treatise on Rail-Roads," By Nicholas Wood. Over 260 experiments. Numerous engravings, 530 pages. 1932, 12s. 6d.
"Bradshaw's General Railway Directory, Shareholders' Guide," etc. 1931, 10s.
"South Eastern Railway Manual," 1930, 7s. 6d.

HEWSON,
HORSE ROAD, BIRCHINGTON, KENT.

PATENTS for Inventions, Trade Marks, Advice, Handbook, and consultations free. King's Patent Agency, Ltd. (B. T. King, C.I.M.E., Registered Patent Agent, G.B., U.S., and Canada), 146a, Queen Victoria Street, London, E.C.4. 49 years' references. Phone City 6161.

REQUIRED, for a South American Railway, a MECHANICAL ENGINEER, to take charge of Shops and Locomotive Running Department. Must be first-class organiser, capable of teaching native staff use of modern machinery and methods of working. Preference given to applicant with large experience in similar positions on railways in Spanish-speaking countries.—Reply, with all particulars and salary required, to Box 11, c/o THE RAILWAY GAZETTE, 33, Tothill Street, Westminster, London, S.W.1.

THE Proprietors of British Patent No. 352,422, for "Improvements in a Method of and Die for Reforming Worn Angle Bars," are desirous of entering into negotiations with interested parties for the granting of licences thereunder on reasonable terms or for the sale of the Patent outright.—Communications please address to Messrs. DICKER, POLLAK & MERCER, Chartered Patent Agents, 20-23, Holborn, London, E.C.1.

South Indian Railway Company Limited

THE Directors are prepared to receive Tenders for the supply of:—

BRASS BOILER TUBES.

Specifications and Forms of Tender will be available at the Company's Offices, 91, Petty France, Westminster, S.W.1.

Tenders addressed to the Chairman and Directors of the South Indian Railway Company, Limited, marked "Tender for Brass Boiler Tubes," with the name of the firm tendering, must be left with the undersigned not later than 12 noon on Friday, the 25th May, 1934.

The Directors do not bind themselves to accept the lowest or any tender.

A charge, which will not be returned, will be made of 5s. for each copy of the Specification.

A. MUIRHEAD,
Managing Director.

91, Petty France,
Westminster, S.W.1.
9th May, 1934.

Great Southern Railways Company

CONTRACTS, 1934.

THE Directors of the Great Southern Railways Company are prepared to receive Tenders for the supply of the undermentioned Stores for Twelve Months commencing 1st JULY, 1934:—

	No. of Form.		No. of Form.
Acetylene, Dissolved	168	Oils, Gas Engine	160
Acid, Sulphuric	3D	Oils, Switch and Fuel	165
Anti-Corrosive Mixture	163	Paints, Mixed ready for use	142A
Axles, Steel, for Locomotives	102	Paints, Spraying	155A
Axles, Steel, for Carriages and Wagons	103	Pins, Coupling, Rod, Cast Steel	167
Benders and Picks	135	Pins, Steel Split Taper	144
Brass and Copper Tube, Sheet Wire, &c.	115	Rivets, Iron	15B
Brass Fittings for Water	26A	Rodding, Channel Iron Point	143
Bricks, Fire	33A	Rubber V. B. Diaphragms	125
Cables, Electric	129	Rubber V. B. Sleeves	126
Canvas for Wagon Tarpsauls	6A	Rubber V. B. Hose Pipes	127
Carbide of Calcium	136	Rubber V. B. Rings and Washers	128
Castings, Iron (Signal)	152	Signal Work Sundries	151C
Cotters, Steel, Split	138	Springs, Volute	107
Driers, Liquid	142B	Steel Bars for Shackle Screws	123B
Drills, High Speed Twist	147	Steel Blooms	109
Grease for Wagon Axleboxes	158	Steel Castings	110
Handles, Tool	141	Steel Plates for Locomotives	116
Iron, Bar	151B	Steel Plates, Sheets and Bars	123
Iron, Cable Bar	151A	Steel Reeled Bars	123A
Lead, Pig, Sheet, Red and White	161	Steel Spring	106
Oil, Mineral Roof Lamp	154	Tin Plates	22
Oil, Colza	156	Tubes, Steel, for Boilers	153
Oils, Paraffin, Gas and Cleaning	157	Tyres, Steel, for Locomotives	104
Oils, Lubricating	159		

Forms of Tender can be obtained on PAYMENT of 6d. each from the STORES SUPERINTENDENT, GENERAL STORES DEPARTMENT, G.S. RAILWAYS, INCHICORE, DUBLIN. Application for forms by post must be accompanied by Postal Order. STAMPS CANNOT BE ACCEPTED. All inquiries for information should be directed to the Stores Superintendent.

Patterns may be inspected at the GENERAL STORES DEPARTMENT, INCHICORE, on and after the 14th instant, between the hours of 10.0 a.m. and 4.0 p.m. (except Saturdays).

Tenders must be enclosed in the envelope supplied for the purpose with each Schedule, and must be posted so as to be with the undersigned before 5.0 p.m. on WEDNESDAY, 30th MAY, 1934.

The Directors will not consider any Tender unless it is furnished on the Company's Form, and do not bind themselves to accept the lowest or any Tender.

The decision of the Directors will be communicated not later than FRIDAY, 13th JULY, 1934, to those FIRMS ONLY whose Tenders are accepted.

By Order,
H. S. COE,
Secretary.

Kingsbridge Station, Dublin.
May, 1934.

SERVICES of Chief Operating Superintendent of a premier railway available. Desires engagement in Transport undertaking. Thorough all-round experience in commercial transport work. Highest credentials. Can be interviewed after first week in May.—Box "A. E." c/o STREETS, 6, Gracechurch Street, London, E.C.3.

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—The Railway Gazette, 33, Tothill Street, Westminster, London, S.W.1.

Railway Share Market

The diversion of speculative interest to other markets, such as rubber shares, does not wholly account for the inactivity prevailing in the market for home railway stocks. Much is due to the uncertainty set up by the raising of the wages question by the trades unions representing the railway companies' employees. There is a feeling that interest in home railway stocks will tend to run on strictly investment lines until the wages question is settled for a definite period.

This may mean an absence of the speculative buying which marked the early part of the year and it will presumably have the effect of widening the character of quotations owing to the restricted nature of the market. Speculative operations add to the benefits of investors by providing them with a very "free" market which is capable of absorbing large lines of stock without materially affecting prices. On Tuesday this week

there was only one change in price in the whole of the market, a marking down of London and North Eastern deferred stock by $\frac{1}{2}$ to $9\frac{1}{2}$. The quotation in this instance is equivalent to a difference of 10 points in a stock quoted at 90. In actual practice, home railway dealers in the Stock Exchange are prepared to "make" closer prices than this and it would probably facilitate business by investors in home railway stocks if these closer quotations were given in the Stock Exchange Official Lists. As a result of the raising of the wages question there is a disposition for market estimates of the current year's dividend prospects to be revised on the ground that a restoration of the "cuts" would probably cost the companies over £4,000,000 a year. Taking the net revenue surplus for 1934 at the rate suggested by the advance in gross receipts to date the market estimates that a restoration of the "cuts" would mean that whilst L.M.S. first preference stocks would be covered by

the year's net earnings there would not be more than $1\frac{1}{2}$ per cent. for the 1923 preference stock. The L.N.E. preference stocks would not be quite covered in full whilst the Southern preferred ordinary stock would show earnings of $4\frac{1}{2}$ per cent. and Great Western preference stock nearly the full amount. The revision of estimates on this basis was causing more attention to be given to the debenture and prior charges than to the junior preference stocks of the companies. It may account for any change of trend which may be seen in the market during the next few months whilst the wages question is uppermost in the minds of shareholders.

Foreign railway stocks have been quiet with business of very small volume. San Paulo debenture stock rose a point but most Argentine preference and debenture stocks were lower. Canadian Pacific shares were weakened and American railroad stocks generally had a fairly large fall early in the week.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1933-34	Week Ending	Traffic for Week		No. of Week	Aggregate Traffic to Date			Shares or Stock	Prices					
			Total this year	Inc. or Dec. compared with 1933		Totals		Increase or Decrease		Highest 1933	Lowest 1933	9. 1934	Yield % (Note)		
						This Year	Last Year								
South & Central America.															
Antofagasta (Chili) & Bolivia	830	6 5.34	£ 10,230	—	£ 220	18	£ 230,200	£ 171,860	+	£ 58,340	Ord. Stk.	26	115½	23	Nil
Argentine North Eastern ..	753	5.5.34	11,000	—	1,100	44	453,400	471,200	—	17,800	"	141½	5	8½	Nil
Argentine Transandine ..	111	—	—	—	—	—	—	—	—	—	A. Deb.	55	40	50	8
Bolivar ..	170	Apl., 1934	6,400	—	550	17	27,050	30,800	—	3,750	6 p.c. Db.	10	5	10	Nil
Brazil ..	—	—	—	—	—	—	—	—	—	—	Bonds.	15	11	13	3½
Buenos Ayres & Pacific ..	2,806	5.5.34	129,000	+	9,000	44	4,840,000	4,887,000	—	47,000	Ord. Stk.	26	97½	121½	Nil
Buenos Ayres Central ..	190	29 4.34	\$93,750	—	\$13,550	44	\$4,693,453	\$4,547,439	+	\$146,014	Mt. Db.	30	10	23	Nil
Buenos Ayres Gt. Southern ..	5,085	5.5.34	174,000	—	38,000	44	8,912,000	9,003,000	—	91,000	Ord. Stk.	441½	21½	28	Nil
Buenos Ayres Western ..	1,926	5.5.34	85,000	—	5,000	44	2,995,000	2,987,000	—	8,000	"	341½	15½	21	Nil
Central Argentine ..	3,700	5.5.34	\$170,000	+	5,000	44	7,331,000	7,971,000	—	640,000	"	281½	15	17	Nil
Do. ..	—	—	—	—	—	—	—	—	—	—	Divd.	18	10	11½	Nil
Cent. Uruguay of M. Video ..	273	5.5.34	17,235	+	2,311	44	724,419	668,398	+	56,021	Ord. Stk.	20	8	15	Nil
Do. Eastern Extn. ..	311	5.5.34	4,503	+	1,779	44	149,677	144,362	+	5,315	"	—	—	—	—
Do. Northern Extn. ..	185	5.5.34	2,621	+	819	44	83,163	85,743	—	2,580	"	—	—	—	—
Do. Western Extn. ..	211	5.5.34	852	—	11	44	70,149	58,692	+	11,457	"	—	—	—	—
Cordoba Central ..	1,218	5.5.34	40,000	+	4,000	44	1,791,000	1,762,000	—	29,000	Ord. Inc.	91½	21½	5	Nil
Costa Rica ..	188	Feb., 1934	16,729	—	1,400	35	157,713	157,900	—	12,187	Stk.	29	20	26½	66½
Dorada ..	70	Mar., 1934	9,500	+	3,500	13	31,500	19,600	+	11,900	1 Mt. Db.	76½	68½	95	61½
Entre Rios ..	810	5.5.34	13,400	—	1,500	44	678,000	658,500	—	19,500	Ord. Stk.	26½	9	15½	Nil
Great Western of Brazil ..	1,082	5.5.34	5,300	—	2,000	18	162,700	223,900	—	61,200	Ord. Sh.	23½	12	4½	Nil
International of Cl. Amer. ..	794	Mar., 1934	\$552,711	+	\$61,146	13	\$1,523,085	\$1,356,820	+	\$166,265	"	—	—	—	—
Interoceanic of Mexico ..	—	—	—	—	—	—	—	—	—	—	1st Pref.	1½	1½	1½	Nil
La Guaira & Caracas ..	223½	Apl., 1934	3,965	—	1,910	17	15,245	27,240	—	11,995	Stk.	16	10	10½	Nil
Leopoldina ..	1,918	5.5.34	17,519	—	88	18	398,143	427,848	—	29,705	Ord. Stk.	201½	10	12	Nil
Mexican ..	483	30 4.34	\$354,600	+	\$142,400	17	\$3,999,500	\$3,182,900	+	\$816,600	"	3	1½	2½	Nil
Midland of Uruguay ..	319	Apl. 1934	7,592	—	713	43	95,108	85,366	—	9,742	Ord. Stk.	2	1	12	Nil
Nitrate ..	411	30 4.34	6,367	+	1,638	17	104,983	34,640	+	70,343	Ord. Sh.	78 6	11½	3½	Nil
Paraguay Central ..	274	5.5.34	5,100	+	1,440	44	147,590	122,490	+	25,100	Pr. Li. Stk.	72	49½	72	85½
Peruvian Corporation ..	1,059	Apl., 1934	49,967	+	6,193	43	556,896	529,310	+	27,586	Pref.	151½	5	12½	Nil
Salvador ..	100	28 4.34	1,917	—	846	44	65,039	125,277	—	60,238	Pr. Li. Db.	70	66½	70	7½
San Paulo ..	1531½	29 4.34	30,561	—	3,651	17	496,043	519,036	—	22,993	Ord. Stk.	102	68	84	25½
Taita ..	164	Apl. 1934	4,155	+	1,965	43	60,935	36,175	+	24,760	Ord. Sh.	15½	3½	14	51½
United of Havana ..	1,365	5.5.34	17,543	—	348	44	854,340	855,924	—	1,584	Ord. Stk.	8	2	5	Nil
Uruguay Northern ..	73	Apl., 1934	961	+	61	43	11,507	14,593	—	3,086	Deb. Stk.	6	3½	5	Nil
Canada.															
Canadian National ..	23,750	30 4.34	819,720	+	109,652	17	10,162,689	8,337,687	+	1,825,002	"	—	—	—	—
Canadian Northern ..	—	—	—	—	—	—	—	—	—	—	Perp. Dbs.	601½	38	68	5½
Grand Trunk ..	—	—	—	—	—	—	—	—	—	—	4 p.c. Gar.	995½	85	100½	4
Canadian Pacific ..	17,018	30 4.34	546,200	+	49,000	17	7,349,400	6,299,000	+	1,050,400	Ord. Stk.	221½	11	16	Nil
India.															
Assam Bengal ..	1,329	7 4.34	30,382	+	9,915	1	30,382	20,467	+	9,915	Ord. Stk.	79	70	78½	313½
Barsi Light ..	202	14 4.34	2,572	—	233	2	5,062	7,927	—	2,862	Ord. Sh.	101½	70	100½	6
Bengal & North Western ..	2,113	14 4.34	54,098	+	4,072	2	104,639	98,937	—	5,702	Ord. Stk.	292	240	279	5½
Bengal Doonars & Extension ..	161	14 4.34	2,104	—	165	2	4,288	4,001	—	287	"	127	119	125	56½
Bengal-Nagpur ..	3,269	7 4.34	116,250	—	20,812	1	116,250	95,438	—	20,812	"	971½	83½	101½	315½
Bombay, Baroda & Cl. India ..	3,089	28 4.34	155,250	—	9,825	4	654,375	680,300	—	5,925	"	112	107	111½	58½
Madras & South'n Mahratta ..	3,230	14 4.34	117,600	+	10,792	2	233,700	220,069	—	13,631	"	127	114½	126½	71½
Rohilkund & Kumaon ..	572	14 4.34	12,698	—	67	2	25,578	26,523	—	945	"	260	225	232	6
South India ..	2,526	7 4.34	76,683	—	2,437	1	76,683	74,246	—	2,437	"	119½	112	117½	61½
Various.															
Beira-Umtali ..	204	Feb., 1934	47,001	+	10,100	21	241,467	191,476	+	49,991	"	—	—	—	—
Bilbao River & Cantabrian ..	15	Apl., 1934	1,787	—	232	17	7,749	5,087	—	2,662	"	—	—	—	—
Egyptian Delta ..	621	20 4.34	5,231	—	496	3	10,675	11,159	—	484	Prf. Sh.	151½	3	2	Nil
Great Southern of Spain ..	104	28 4.34	2,089	—	446	17	37,089	36,925	—	164	Inc. Deb.	4	3	5½	Nil
Kenya & Uganda ..	1,625	Jan., 1934	34,690	+	5,462	4	34,690	29,228	+	5,462	"	—	—	—	—
Manila ..	—	—	—	—	—	—	—	—	—	—	B. Deb.	53	33½	45½	71½
Mashonaland ..	913	Feb., 1934	82,002	+	22,400	21	441,733	295,532	+	146,201	1 Mg. Db.	915½	42	94	51½
Midland of W. Australia ..	277	Feb., 1934	12,965	—	445	34	108,714	104,268	—	4,446	Inc. Deb.	89	70	96½	4½
Nigerian ..	1,903	24 3.34	40,375	—	10,914	52	1,818,311	1,841,510	—	23,199	"	—	—	—	—
Rhodesia ..	1,538	Feb., 1934	140,537	+	32,003	21	755,254	531,978	+	223,276	4 p.c. Db.	98½	80½	100½	4
South African ..	13,180	7 4.34	430,574	—	423	1	430,574	430,151	—	423	"	—	—	—	—
Victorian ..	6,172	Feb., 1934	735,677	—	53,515	34	5,849,572	6,175,377	—	325,805	"	—	—	—	—
Zafra & Huelva ..	112	Mar., 1934	11,420	+	994	13	34,755	31,396	+	3,279	"	—	—	—	—

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1%.
 † Receipts are calculated @ 1s. 6d. to the rupee. ‡ ex dividend. § Average rate of exchange for the week:—This year 31 $\frac{1}{2}$. Last year 41 $\frac{1}{2}$.

Nil
Nil
711₁₆
55₁₆
41₈
4